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Medicinal Preparations**

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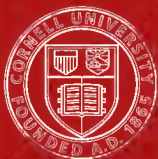
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Modern Medicinal Preparations

OF THE

FARBWERKE

(Vormals Meister, Lucius & Brüning)

HOECHST-ON-MAIN, GERMANY

AND

VEREINIGTE CHEMISCHE WERKE

(Vormals Benno, Jaffé & Darmstaedter)

CHARLOTTENBURG, GERMANY



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PREFACE TO THE SECOND EDITION.

THE first edition of Modern Medicinal Preparations issued January, 1903, was received with such marked favor, that we feel justified in the issuing of a second. There will be found a number of changes, some of the remedies included in the first edition being left out of this, while several new ones have been incorporated. Most of the articles have been rewritten in order to bring them up to date. As the remedies treated of are limited, it is obviously less difficult to keep abreast of the progress made with the newer ones—and new application of the older ones. References to the products appearing in the medical press of this country, as well as of Europe, are so very voluminous, that we can give but a few of them, in order that the book may be kept within reasonable size. The chemistry is but briefly given, or, when it is complicated, left out entirely, as we believe that the physician is more interested

PREFACE TO SECOND EDITION.

in the physiological properties, incompatibles, and therapeutic applications. These, as before, have been conscientiously given, every statement being taken from clinical reports appearing in reputable medical journals, which can be verified by the references given.

VICTOR KOECHL & Co.

New York, January 1st, 1907.

PREFACE.

CLINICAL Reports are appearing from time to time on the products mentioned in this book, of great value to the practiser of medicine, and while it would be utterly impossible to give even brief abstracts of these reports, it is believed that a concise statement of not only the therapeutics of the various remedies, but their chemistry as well, will be of value to the busy physician and surgeon. The statements are necessarily brief and may seem to some dogmatic, but this is unavoidable in a work of this character. The information is accurate and taken from medical journal reports with no other desire or motive than to give facts, all of which can be verified by reference to the journals mentioned in the necessarily limited bibliography following each article. Only such writers and journals are mentioned as it is believed will command the interest of the reader, because of their international or national reputation as careful and painstaking investigators. The impulse which might prompt

PREFACE.

the writer for commercial purposes to dilate upon the virtues of the various remedies has been conscientiously resisted, and only facts given—facts which are repeatedly attested in the literature mentioned and which are representative. The main object in view is to give the medical man a correct idea of the views held regarding these products by competent authorities of different nationalities; a clear and concise statement without repetition.

We present this little volume in the hope that it will give a convenient and reliable source of information as to the remedies mentioned, thus enabling the progressive and busy physician to keep abreast of the advances made in newer therapeutics.

VICTOR KOECHL & Co.

January 1, 1903.

THERAPEUTIC INDEX.

- Analgesic :** Antipyrin, Ferripyrin, Hypnal, Migrainin, Pyramidon.
- Anemia :** Ferripyrin.
- Anesthetic, Local :** Anesthesin, Antipyrin, Novocain, Orthoform, Orthoform Hydrochlorid.
- Antidiabetic :** Benzosol.
- Antidiarrhetic :** Dermatol, Gujasanol.
- Antidiphtheritic :** Diphtheria Antitoxin "Behring."
- Antidyspneic :** Oxaphor.
- Antigonorrhoeic :** Albargin, Alummol, Argonin.
- Antihydropic :** Pyramidon Camphorate Acid.
- Antilithic :** Lysidin, Sidonal, Sidonal New.
- Antineuralgic :** Antipyrin, Migrainin, Pyramidon, Pyramidon Salicylate, Valyl.
- Antipodagric :** Lysidin, Sidonal, Sidonal New.
- Antipyretic :** Antipyrin, Pyramidon, Pyramidon Camphorate Acid, Pyramidon Camphorate Neutral.
- Antirheumatic :** Pyramidon Salicylate.
- Antiseptic :** Albargin, Alummol, Argonin, Dermatol, Gujasanol, Isoform, Tumenol.
- Antispasmodic :** Antipyrin, Tussol, Valyl.
- Antitubercular :** Benzosol, Gujasanol, Tuberculin Koch, Tuberculin New Koch.
- Astringent :** Alummol, Dermatol, Ferripyrin.
- Cicatrizant :** Dermatol, Isoform.

THERAPEUTIC INDEX.

Deodorant: Gujasanol, Isoform.

Dietetic: Nutrose, Pegnin.

Exophthalmic Goiter: Rodagen.

For Agglutinating Liquid: Tubercle Bacilli.

For Cystitis or Vesical Catarrh: Benzosol, Gujasanol, Isoform.

For Diagnosing Tuberculosis: Tuberculin Koch.

For Eczema: Tumenol, Tumenol-Ammonium.

Germicide: Argonin.

Gonocide: Albargin, Alumol, Argonin.

Hematinic: Ferripyrin.

Hemostatic: Antipyrin, Dermatol, Ferripyrin.

Hypnotic: Hypnal, Pyramidon.

Intestinal Antiseptic: Benzosol, Isoform.

Local Anesthetic: Anesthesin, Antipyrin, Novocain, Orthoform, Orthoform Hydrochlorid.

Nutrient: Nutrose.

Ocular Anesthetic: Holocain.

Pertussis: Antipyrin, Tussol.

Pruritus: Alumol, Tumenol, Tumenol-Ammonium.

Reconstituent: Nutrose.

Styptic: Antipyrin, Dermatol, Ferripyrin, Orthoform.

Uric Acid Solvent: Lysidin, Sidonal, Sidonal New.

MODERN MEDICINAL PREPARATIONS.

ALBARGIN.

(*Gelatose-Silver.*)

Like the albumins and albumoses the decomposition products of gelatin possess the property of forming compounds with silver, in which the silver is disguised. Albargin contains 15 per cent. of silver and is therefore powerfully antiseptic and germicidal; occurs as a voluminous light brown powder, quite stable toward light, best, however, kept in amber-colored bottles. The substance is entirely soluble in hot or cold water (50 per cent. being easily obtained), the solution remaining permanent if not continuously exposed to the direct rays of light. Aqueous solutions are neutral, and when used as injections or irrigations for gonorrhea, in from $\frac{1}{10}$ to $\frac{2}{10}$ per cent. for irrigations, and $\frac{1}{2}$ to 2 per cent., depending on degree of inflammation, as injections, nonirritating. Solutions should be used at a temperature of from 70 to 90° F.

Hydrogen sulfid gives with Albargin a dark color, but does not form a precipitate, while the transparency of the substance is not affected by the addition of sodium carbonate

or soda-lye solutions. Diluted sodium chlorid solutions or hydrochloric acid gives a faint or strong opalescence, according as the solution is more or less concentrated, while a dilute solution of mercuric chlorid is not affected by the addition of Albargin. Cocain in solution, when used in connection with Albargin, after a short time gives a precipitate, and should, therefore, not be used unless freshly made.

Albargin shows the following reaction with albumen in solutions: On mixing 50 cc. of albumen solution (20 gm. fresh egg albumen in 1 litre of water) with 5 cc. of a 1 per cent. Albargin solution, the liquid becomes opalescent and gradually decomposes, a precipitate forming in half an hour. A solution of silver nitrate of corresponding strength gives a precipitate immediately.

Like other organic silver products, Albargin is incompatible with ferric or ferrous salts, solutions containing tannin, opium, resins, essential oils, etc. It can, however, be used with mercuric chlorid solutions 1:10,000, such solution remaining permanent.

The Albargin molecule is said to be much smaller than that of albuminous products containing silver, and, therefore, the solutions more easily and quickly penetrate the tissues and destroy the microorganisms. In the treatment of gonorrhea this quality is of the greatest importance, as thus only can the gonococci be destroyed.

Competent authorities appreciate this, and instead of, as formerly, treating gonorrhea with astringents, whose effect is to form pockets or folds in the urethral mucous membrane and thus give protection to the germs, allowing them to multiply and emigrate,

antiseptic solutions are used first to destroy them and later on, or after they have disappeared, as evidenced by microscopical examinations of the discharge, an astringent is used to close up the crypts and thus stop the discharge. The relatively small percentage of Albargin solution needed, to say nothing of a less first cost of the product, makes the treatment with it decidedly less expensive than with other silver preparations, a matter of importance to the physician as well as to the patient.

Tubes of 50 Tablets,
0.2 gm. each, per Tube, \$0.75..

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ALUMNOL.

(*β-Naphtol disulfonate of Aluminum.*)

Alumnol occurs as a colorless powder readily soluble in water and glycerin, but only slightly soluble in alcohol. Aqueous solutions are incompatible with alkaline solutions, the hydrate of alumina being precipitated. It precipitates albuminous and gelatinous bodies, the precipitate being soluble in an excess of albumin or gelatin. Alumnol should not be brought into contact with ammoniacal compounds. It is astringent and antiseptic.

Owing to the property which Alumol has of dissolving in pus, it has a more penetrating action into the tissues than other agents, and thus facilitates the disinfection of purulent surfaces and cavities. It is a general favorite in surgical, otiatric, gynecological, and dermatological disturbances. Is recommended in 1 per cent. solution in gonorrhea; in 10 per cent. as a caustic for abscesses; in 1 to 5 per cent. solutions in leucorrhea, and in 5 to 20 per cent. mixture with talcum as a dusting powder in the nursery. Favorable results are reported in the treatment with Alumol of endometritis, otitis media, and in purulent discharges from the eye; inhalations of a 1 per cent. solution in acute laryngeal affections, and as a hemostatic in hemoptysis; in acne rosacea, chronic inflammatory syphilitic and parasitic skin affections and in nasal hemorrhage.

1 Ounce Tins,
per oz., \$0.65.

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ANESTHESIN.

(*Para-amidobenzoic acid ethyl ester.*)

As elsewhere mentioned, the employment of orthoform has shown that individual cases are occasionally met with in which the patient

exhibits an idiosyncrasy against the external application of the drug, and investigations carried out in respect to this idiosyncrasy led to the discovery that it was attributable to the phenol component; although this objection was seldom raised, it was nevertheless desirable to obviate it entirely by a further search for substances which, possessing equally good anesthetic properties, would not contain the phenol group. These desired properties were found to be possessed by a substance first prepared in 1890 by Ritsert and investigated from a pharmacological standpoint by Kobert and Binz, namely ethyl-para-amido-benzoate, to which the commercial name Anesthesin was given. Clinically Anesthesin was tried by Prof. v. Noorden and many others and found both efficient and non-poisonous.

Chemical and Physical Properties: Anesthesin is a fine white crystalline powder melting at 90 to 91° C. and easily pulverized; it is almost insoluble in cold water, difficultly soluble in hot water, easily soluble in ether, alcohol, benzene, and fatty oils. It dissolves in almond oil to the extent of 2 per cent., in olive oil to 3 per cent., and these oleaginous solutions may be sterilized without decomposition. By long continued boiling with water, as well as on warming it with dilute solutions of alkalies, Anesthesin is decomposed into para-amido-benzoic acid and alcohol.

Pharmacological Characters: Investigations made by experiments on animals have determined that there is absolutely no danger from the employment of Anesthesin in therapeutical doses. Clinical trials have led to the same conclusion. As regards its physiological ac-

tivity, Anesthesin is on a parallel with orthoform. It quickly renders sensitive nerves with which it comes into contact insensible to painful operations and subdues pain with the same certainty as does orthoform. Experiments and clinical observations have proved that even the most delicate tissues tolerate Anesthesin without the slightest symptom of irritation. It can therefore be applied freely to all kinds of fresh operation wounds, burns, sluggish granulations and the like, without producing any irritation or other unpleasant effects.

Indications: Internally it answers in various forms of gastralgia, particularly for ulcerated stomach, hyperesthesia of the stomach, nervous dyspepsia, sickness of pregnancy.

In rhinological and laryngological practice, in all kinds of catarrhs, particularly in whooping cough, tuberculous and syphilitic ulcerations of the throat it is usually administered by means of insufflation, inhalation, or painting, as well as in the form of lozenges and sweets in place of angina pastilles.

In hyperdiuresis and urethritis as a result of mechanical or infectious irritation, or even of purely nervous origin, in the form of pencils, pessaries, etc.

Externally Anesthesin is employed to render insensible the surfaces of wounds before dressing for hemorrhoids, and for all kinds of ulcers and painful wounds such as burns, ulcer of the leg, intertrigo, gangrenous patches, and in pruritus, particularly in pruritus vulvæ of diabetics and the pruritus of jaundice; in eczema either as pure powder or in the form of dusting powder mixed with dermatol or as an ointment with a lanolin base.

Dosage: Internally 5 to 8 grain doses several times daily (maximum 30 grains) almost always suffice when taken before meals. Externally Anesthesin can be dusted on surfaces as desired, as it is well-nigh insoluble.

In the form of ointments or as a dusting powder 5 to 20 per cent. Anesthesin is used. Pessaries and pencils should contain 8 grains, suppositories 3 grains.

PREScriptions.

- ℞ Anesthesin Ritsert gr. iv. to viij.
D. tal. dos. No. x.
One powder thrice daily before meals.
- ℞ Anesthesin Ritsert gr. xlv.
Spiritus vini rect. 3 iiss.
Aq. dest. fl. 3 ij.
For inhalation.
- ℞ Anesthesin Ritsert,
Dermatol āā 3 ij.
Dusting powder for wounds.
- ℞ Anesthesin Ritsert 3 v.
Menthol 3 iiss. to v.
Ol. oliv. fl. 3 iv.
For inhalation.
- ℞ Anesthesin Ritsert 3 ss.
For dusting wounds.
- ℞ Anesthesin Ritsert 3 iiss.
Lanolin Liebreich,
Vaseline āā 3 iiss.
Anesthesin ointment.
- ℞ Anesthesin Ritsert 3 ss.
Amylum 3 ivss.
Dusting powder.
- ℞ Anesthesin Ritsert,
Dermatol,
Creta Gallica, ... āā 3 ss.
Anodyne powder for burns.
- ℞ Anesthesin Ritsert,
Dermatol āā 3 ss.
Amylum 3 iv.
Dusting powder.
- ℞ Anesthesin Ritsert pulv. subt. 3 ss.
Mucilag. Acacia 3 i.
Anesthesin mucilage for painting wounds.
- ℞ Anesthesin Ritsert 3 ss. (or 3 1)
Lanolin Liebreich 3 ivss.
Anesthesin Ointment (5 and 10 per cent.).

PRESCRIPTIONS—(Continued).

℞ Anesthesin Ritsert.....	gr. cl.
Adeps lanæ anhyd.....	℥ iiss.
Ol. olivar.....	℥ ss.
Anesthesin ointment.	
℞ Anesthesin Ritsert	gr. iij.
Ol. Theobroma.....	gr. xxv.
D. tal. dos. No. v.	
Suppositories for hemorrhoids.	
℞ Acid Arsenicos.....	gr. lx.
Anesthesin	gr. xxx.
Ol. caryophyllus	℥ xv.
Creasote	q. s.
Paste for killing nerves of teeth (Kobert).	

According to Professor Haug of Munich, the following prescriptions are employed in the treatment of diseases of the ear.

℞ Anesthesin	gr. xxv.
Ol. olivar. opt.....	℥ iij.
℞ Anesthesin	gr. lx.
Alcohol,	
Glycerin	āā ℥ i.
℞ Anesthesin	gr. cl. (or gr. lxxv.)
Gelatin. alb.	gr. cl.
Glycerin.....	℥ iij.
For ear pellets.	
℞ Anesthesin	gr. lx.
Alcohol,	
Aq. dest.	āā ℥ i.
℞ Phenol (or Acid. Salicylic.).....	gr. xv.
Anesthesin	gr. xxx.
Alcohol,	
Aq. dest.	āā ℥ vi.
Glycerin	℥ iij.
For eczema, etc.	
℞ Thymol (or Menthol or Naphthol).....	gr. iss.
Anesthesin. {.....	gr. xxx.—lx.
Alcohol.....	℥ i.
Glycerin	℥ vi.
For eczema, etc.	
℞ Thymol	gr. iss.
Dissolve by slightly heating in	
Glycerin	℥ iss.
and add	
Anesthesin	gr. xv.—xxx.
Alcohol abs.	℥ lxxv.
For earache drops.	

**1 Ounce Bottles,
per ounce, \$1.35.**

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-

ANTIPYRIN. Knorr.

(*Phenyldimethylpyrazolon.*)

Antipyrin is a synthetic base from which numerous salts are formed and is so well and favorably known that but brief reference is needed here. It occurs in colorless and odor-

less needlelike crystals, which are very soluble in water and melt at 112° C. Antipyrin should not be used with spirits of nitrous ether, or dilute sulfuric acid, with either of which it turns green. Addition of ferric chlorid changes it to red. It is incompatible with phenol, tannic and dilute hydrocyanic acids, chloral, decoctions, tinctures or extracts of cinchona, iron sulfate, ferric salts, Donovan's solution, calomel, beta naphthol, the nitrites, bicarbonates, and salicylate of sodium, tincture of iodine, and all tinctures or infusions containing tannin.

Antipyrin is the most important in the list of antipyretics, analgesics, and hemostatics. It reduces temperature by decreasing the rate, but not the force of the pulse. Indeed, there is scarcely a condition accompanied with pain which Antipyrin will not relieve, being especially serviceable in migraine, locomotor ataxia, rheumatism, and the various forms of neuritis; in the first stage of labor, in urticaria, nocturnal emissions, hysteria, and in nocturnal incontinence of urine, chorea, whooping cough, tetanus, and in epilepsy. It has the effect of controlling the secretions in diarrhea, diabetes mellitus and insipidus, as well as to arrest the secretion of milk.

Antipyrin has many and various uses in surgery. As a local anesthetic in solutions of from 10 to 50 per cent., it is often more efficacious than cocain, and without the unpleasant and often dangerous disturbances which accompany or follow the application of cocain. It is a serviceable and efficient hemostatic, controlling hemorrhage in from 5 to 15 per cent. solutions when applied, without causing a corrosive action. For this purpose it is especially serviceable in operations upon the

nose or throat, as well as in the ordinary nose-bleed. The analgesic action is prominent in such applications.

Solutions of Antipyrin being neutral, it is applicable hypodermically when there is deep-seated pain, as in sciatica. Immediate relief is afforded in tic douloureux and neuralgia when it is thus used.

In conclusion Antipyrin may be relied upon in surgery as a styptic, hemostatic, a local anesthetic in the treatment of burns, hemorrhoids, and as a stimulant when applied to atonic ulcers. In pneumonia, hectic, typhoid, diphtheria to control temperature, in the acute attacks of gout, nephritic colic, erysipelas, and as a uterine sedative.

1 Ounce Tins,
per oz., \$0.40.

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The above are but a few of the many hundreds of references to Antipyrin.

ARGONIN.

(*Argentum Casein.*)

Argonin is a silver proteid and occurs as a fine white powder free from either an acid or alkaline reaction. Insoluble in cold but rather freely soluble in hot water, forming with distilled water an opaque solution. It is not precipitated by solutions of sodium chlorid or albuminous fluids. Fifteen grains of Ar-

gonin contain as much silver as does one grain of silver nitrate. It is an antiseptic, germicide, and gonocide.

Argonin has been used principally in gonorrheal urethritis, ophthalmia, and as a prophylactic to ophthalmia neonatorum. It is also applicable to other conditions where a germicidal effect is desired, particularly in eye, nose, and throat affections.

In the treatment of gonorrhea two effects are sought: First, the destruction of the gonococci, and second, the reduction of inflammation. To bring about the effect without damage to the mucous membrane, silver preparations are preeminent and in this class of remedies Argonin deservedly holds the first rank. Formerly gonorrhea was treated with astringents, such as lead acetate, zinc sulfate, bismuth subnitrate, and various mixtures containing substances rich in tannin. Even with our present knowledge of the cause of the disease, writers are in evidence who believe that when the discharge is determined the cure is complete, losing sight of the fact that the only effect of the astringent injections into the urethra is to close the crypts and folds of the mucous membrane, thus protecting the germs and allowing them to multiply and emigrate into the deeper tissues where they are difficult to reach. This same effect is brought about by injections which coagulate the albuminous tissue fluids. Obviously the first requisite is to destroy the germs and then apply astringents to close the crypts and stop the discharge. Argonin destroys the gonococci in from three to fourteen days, but should then be followed by astringents to terminate the discharge, as it has no astringent properties.

Frequent microscopical examinations will alone determine the absence of the offending gonococci and not until then should the astringent injection be used. This second stage of the treatment usually consumes but a few days. In posterior urethritis and in prostatitis due to gonorrheal infection, irrigations should be used of from 1 to 2 per cent. solutions.

Argonin injections may be made at any stage of the disease. It is nonirritating, causing very little pain when used, and then only in the highly inflamed urethra, or when an abnormal irritability exists, as is occasionally found.

Argonin should be used in from 2 to 10 per cent. solutions in gonorrhea, the strength being determined by the degree of existing inflammation, beginning in highly inflamed conditions with a 2 per cent. and increasing the strength of solution as the inflammation subsides. In chronic or subacute conditions stronger solution may be used at once. The usual precautions should be taken to inject immediately following urination and the solution be retained in the urethra for from five to ten minutes.

In gonorrheal ophthalmia solutions of 3 to 5 per cent. are to be instilled into the eye, once or twice a day, everting the lids and using an eyedropper.

In middle-ear suppuration a 2 to 5 per cent. solution was very successfully used by Frank Gray and Wm. R. Thompson (*Texas Courier-Record of Medicine*, 1898).

A word as to the best method of making Argonin solutions. Take the required amount of Argonin, mix thoroughly with a small quantity of cold water, using a glass rod, or shaking in

a test-tube; heat this over a spirit lamp, being careful not to bring to the boiling point, shaking until perfect solution is obtained. Then add distilled water sufficient to make the desired percentage solution, strain through muslin or cheese cloth, and keep in colored bottles in a dark and cool place.

1 Ounce Bottles,
per oz., \$1.00.

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From a very voluminous bibliography we quote only the following:

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ATOXYL.

(*Meta-arsenite of Anilid.*)

Atoxyl is an almost nontoxic preparation of arsenic, which at the same time possesses a most pronounced therapeutic action by combining this element with anilid in a fixed organic compound.

The substance thus produced is meta-arsenite of anilid. It is a white, crystalline, odorless

and tasteless substance which is readily soluble in water, and which gives up its arsenic only after very radical treatment, such for instance as fusion with caustic potash.

Atoxyl has shown itself through physiological experiments so free from toxic properties that from 40 to 50 times as much arsenic may be assimilated in this form as when the element is exhibited in Fowler's solution or other of the ordinary arsenical preparations. In contrast to the other combinations containing arsenic, inorganic or organic (cacodylates, etc.), the use of Atoxyl is not attended with unpleasant collateral phenomena—irritation, abscess formation, etc.—and, above all, the breath, sweat, dejections, etc., do not become impregnated with the extremely disagreeable odor of cacodyle.

Clinical and therapeutic results are in agreement with those obtained in laboratory experiment. The hypodermic injection of Atoxyl, even in large doses, is not followed by any burdensome collateral phenomena, whether of local or general character; and in consequence those affections which are shown by experience to be influenced by arsenic (diseases of the skin, blood, and nerves) respond most favorably to the exhibition of Atoxyl.

In conditions of debility and cachexia such as accompany carcinoma and like affections, Atoxyl has proved of great value.

The dose of atoxyl (hypodermic) is 0.02 to 0.04 grm. ($\frac{1}{3}$ to $\frac{2}{3}$ gr.) every other day.

1 Ounce Bottles,
per oz., \$4.00.

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BENZOSOL.

(*Guaiacol Benzoate.*)

Benzosol is a compound of guaiacol in which a hydrogen atom of its hydroxyl is replaced by benzoyl. It is a colorless, crystalline powder, with but a slight and not unpleasant odor and taste. Melts at 59° C. Is insoluble in water, but readily soluble in hot alcohol, ether, or chloroform.

A solution of Benzosol in sulfuric acid produces a permanent yellow color. The addition of first sulfuric acid (conc.) to Benzosol and then to alcohol and acetone solution, results in a characteristic brilliant cherry red color. This serves as a mark of distinction from salol, which, under similar conditions, gives a yellow coloration. A mixture of Benzosol and sulfuric acid gives a violet, green, and blue coloration upon the addition of ferric chlorid. This is changed to an orange and green by the subsequent addition of nitric acid; to green, violet, and yellow when potassium nitrate is added; to a pure green upon the addition of an alcohol in solution of amyl nitrite. A sulfuric acid mixture of Benzosol gives a red coloration upon the addition of cane or grape sugar.

Benzosol contains 54 per cent. of guaiacol, and is recommended as an intestinal antiseptic, antitubercular and antidiabetic remedy, in doses of 0.25 to 0.5 gm. (4 to 7½ grs.).

The therapeutic value of Benzosol depends upon the combined action of guaiacol and benzoic acid, the decomposition taking place partly in the stomach, but chiefly in the small intestines, as a result of the action of the alkaline secretions, and is excreted in the urine.

Whenever creasote or guaiacol are indicated, Benzosol will be found preferable, containing as it does all the virtues of either, without their destructive action upon the stomach. It may be given in conjunction with cod-liver oil or hypophosphites, but the consensus of opinion among those who have used it most is that there is greater and more speedy improvement when Benzosol is used alone.

Benzosol is an ideal intestinal antiseptic and antifermentative, and will be found of great service in those disturbances arising from autointoxication. It is also useful in typhoids, diarrhea due to intestinal fermentation, in diabetes mellitus, lessening the quantity of sugar, and therefore the specific gravity of the urine, as well as the quantity of the urine excreted. In cystitis its action is most marked, the urine being rendered neutral, and the antiseptic effect upon the bladder walls being pronounced. Finally, through its effect upon metabolism, Benzosol is serviceable in diseases resulting from an interference with that function, such as gout, rheumatism, and the train of disturbances which accompany a uric acid diathesis.

1 Ounce Tins, ...
per oz., \$1.45, ...

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DERMATOL.

(*Basic Subgallate of Bismuth.*)

Dermatol is chemically pure bismuth subgallate, and is devoid of the irritating properties of the commercial product marketed as bismuth subgallate, which contains impurities rendering it unfit for many applications, while Dermatol can be used upon open wounds, internally, and dusted into the eye without causing the least irritation, in fact rather exercising a decidedly sedative effect when so used.

It is an odorless, tasteless yellow powder which is insoluble in water and ordinary solvents, but acted upon by the secretions. It is applicable externally whenever iodoform is indicated, as well as internally as an anti-fermentative and astringent.

It is especially serviceable applied to burns, ulcers, and moist eczema, in conjunctivitis of whatever nature, corneal ulcers, and as a dusting powder, pure, or mixed with powdered starch or French chalk to wounds and irritations of the skin of infants. It is also useful in dental surgery as a hemostatic. It decreases the secretion, arrests hemorrhage, promotes

healthy granulations by protecting the surface with an artificial scab. In gynecology and in rhinology when there is an undue amount of secretion, as well as following operations to arrest hemorrhage, and the application of the galvanocautery, Dermatol will prove eminently satisfactory. Internally it is without an equal in the treatment of diarrhea, dysenteries, intestinal fermentation, and gastric ulcers. Its use precludes the untoward effects following the use of iodoform, besides the greater comfort of both physician and patient because of the absence of the disgusting tell-tale odor of iodoform.

Being nontoxic and nonirritating, it can be applied without stint or given internally without harm, such as follows the too powerful astringent effect of tannin and its congeners. The dose of Dermatol is from 0.25 to 1.5 gm. (4 to 22 grs.) frequently during the day.

1 Ounce Tins,
per oz., \$0.25.

BIBLIOGRAPHY ON DERMATOL.

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DIPHTHERIA ANTITOXIN.

The voluminous literature on the treatment of diphtheria with its antitoxin, leaves nothing new to be said in its favor. The reduction of

mortality by not less than 50 per cent., or to even one-fourth of the previous death-rate, is conceded by the most careful observers. Statistics drawn from more than one hundred thousand cases, collected from different countries and in different years, are so convincing that no sane practitioner can doubt its efficacy, or dare to oppose its usefulness when employed early in the disease.

Behring's Diphtheria Antitoxin is the original product. Its use has never been followed by disastrous or untoward results.

It has been repeatedly demonstrated that 200 to 300 units of Diphtheria Antitoxin "Behring" provides immunity against the disease for from three to four weeks. These immunizing doses have practically entirely stamped out diphtheria from the infant asylums, where the mortality was formerly so great.

As a curative agent the Antitoxin should be administered at the earliest possible moment. As no harm follows its application it were best to inject from 1,500 to 3,000 units in ordinary cases. This may be increased to 4,000 to 5,000 units in very severe cases. Children under one year, one-third less than older children, at once when the disease is probable rather than to wait for a bacterial confirmation of the diagnosis.

When administered the first day the mortality is said by competent observers to be practically nil, but that it increases as the treatment is delayed from day to day. If the injection is not made until the second day, the mortality increases to 6 per cent., and further increases from day to day to the frightful mortality of 50 per cent. where the injection is not made until the fourth day. Finally, one large

initial dose is productive of greater good than repeated smaller doses.

Vials, No. I, 600 units, per vial, \$0.65.

Vials, No. II, 1,000 units, per vial, 1.10.

Vials, No. III, 1,500 units, per vial, 1.60.

For Bibliography on Diphtheria Antitoxin, see the Medical Press for the last eight years.

FERRIPYRIN.

(*Ferric-Chlorid Antipyrin.*)

Ferripyrin is a molecular compound of ferric chlorid and antipyrin. It is a fine orange red powder, soluble in five parts of water at 15° C., and in nine parts at 100° C.; very soluble in alcohol, but insoluble in ether. Is incompatible with alkalis or alkaline bicarbonates, ferric hydrate being precipitated from the aqueous solution by the addition of these substances. It is styptic and analgesic, without the corrosive action—when applied in solution or powder—of ferric chlorid or other ferric salts; anesthetic through its antipyrin constituent, as well as hematinic when given in doses of 0.05 gm. (1 gr.) internally.

Ferripyrin exhibits no corrosive action like the ferric chlorid or the persalts of iron, even when it is allowed to remain in contact with the tissues for a long time. The mucous membrane or other tissue is temporarily colored a pale yellow, but this quickly disappears. It is a powerful astringent with a decided anesthetic action and can be used to control hemorrhage, either in a solution of 10 per cent.

in water, or applied direct to the bleeding surface by insufflation, on tampons of absorbent cotton, and by means of a syringe in uterine hemorrhages from abortion, endometritis, profuse menstruation, fibromyoma and carcinoma of the cervix. Its use does not form a disagreeable black and tenacious clot or coagulum as does ferric chlorid.

Ferripyrrin is an admirable hematinic given in anemia, 1 grain in solution three times a day. It is also used internally in chronic diarrhea, two to eight grains pro dosi, with simple elixir.

Finally, Ferripyrrin is a reliable styptic in dental surgery.

1 Ounce Tins,
per oz., \$1.75.

BIBLIOGRAPHY ON FERRIPYRRIN.

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GUJASANOL.

(*Diethylglycocol-Guaiacol.*)

Gujasanol is chemically the hydrochlorid of diethylglycocol-guaiacol. It crystallizes in white prisms, has a melting point of 148° C., with a faint odor of guaiacol; is easily soluble in water, aqueous solution being neutral. The addition of alkaline carbonates to aqueous solutions of Gujasanol liberates the basic

diethylglycocol-guaiacol, which has the appearance of oil.

Pharmacological experiments show this preparation to be powerfully antiseptic, deodorant and anesthetic, nonpoisonous even in large doses, subcutaneous injections of 45 grains in rabbits not being followed by toxic symptoms.

The indications for use of Gujasanol are such as for creasote or guaiacol. It is well borne in phthisis, being followed by improvement in appetite. In tubercular ulcerations of the throat it can be used locally, by mouth or subcutaneously. It is also useful as an intestinal disinfectant in diarrhea, tubercular diarrhea being controlled usually after the administration of 45 grains. In purulent cystitis and as a disinfectant in bladder troubles by irrigations $\frac{1}{2}$ to 3 parts to 1000 or administered by mouth in doses of 120 grains pro die; has a favorable effect on septic diseases as an antiseptic; is a deodorant in ozena in tampons saturated in a 10 per cent. solution every half hour. In ulcerations of the bones, erupted sarcoma, purulent carcinoma, etc., in two per cent. solutions in compresses; in malodorous stomatitis as irrigations $\frac{1}{2}$ to 2 per cent., or 5 per cent. solutions for painting; in ophthalmology, for all superficial wounds of the eye in 1 per cent. solutions, there being when thus used quite a perceptible anesthetic effect. Finally it is used in chronic inflammatory conditions of the connective tissue where an astringent or corrosive agent is not tolerated, in 1 per cent. solutions.

Dose of Gujasanol internally from 45 to 180 grains per day, or subcutaneously 45 to 60 grains in concentrated aqueous solutions.

25 Grm. Bottles.
per bottle, \$1.25.

BIBLIOGRAPHY ON GUJASANOL.

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HOLOCAIN.

(*P-dieth-oxy-ethenyl-diphenyl-amidin-hydrochlorid.*)

(Ocular Anesthetic.)

All of the anilin antipyretics have a more or less local anesthetic action. This becomes in the case of the phenetidin group much stronger through combinations with a second base.

Holocain occurs as a white crystalline powder, difficultly soluble in cold, but readily so in boiling water. If more than 2 per cent., however, be dissolved, the remainder will recrystallize upon cooling. One to 2 per cent. solutions remain unchanged for indefinite periods if solutions are made and kept as below.

Alkalies and alkaloidal reagents produce precipitation when brought into contact with Holocain in solution even in infinitesimal quantities. It is, therefore, necessary that great care be taken that solutions be made in porcelain capsules and kept in porcelain containers, or in bottles which have been previously boiled in hydrochloric or sulfuric acid, and thoroughly rinsed in distilled water. Only distilled water should be used in making the solutions. Even the small quantity of alkali in glass vials will render a solution of Holocain turbid. This, however, can be filtered out without destroying the anesthetic properties of the solution.

Holocain hydrochlorid (the only preparation used and designated simply Holocain) melts at 189° C. Aqueous solutions have a neutral reaction with a slightly bitter taste. It is distinguished from cocain hydrochlorid by its comparative insolubility in water, and the readiness with which it reduces potassium permanganate solutions. Cocain will not reduce potassium permanganate solutions if free from its amorphous side alkaloids. Boiling with hydrochloric acid produces no effect upon Holocain. If, however, phenacetin be present as an adulterant, a ruby red color will be obtained upon the addition of chromic acid solution, due to the splitting off of the p-phenetidin.

Holocain is powerfully antiseptic and germicidal, a 1 per cent. solution not alone inhibiting the growth, but quickly destroying the most resistant microorganisms as well as preventing putrefaction and fermentation.

Anesthesia from Holocain according to Heinz and Schlosser (*Klinische Monatsblätter für Augenheilkunde*, April, 1897) is brought about by paralysis of the sensory nerve endings, further action than anesthesia not being produced. There is no influence upon the width of the pupil, the mechanism of accommodation, corneal epithelium, or constriction of the vessels. One or two drops of a 1 per cent. solution instilled into the eye will produce complete anesthesia in from forty to fifty seconds. If, after forty seconds have elapsed, one or two drops more of the same solution are instilled into the eye, another interval of thirty seconds will find the cornea completely analgesic, lasting at least for ten minutes. Operations involving the opening of the capsule for iridectomy, cauterization of corneal ulcers, the

removal of foreign substances, etc., are entirely painless.

Holocain should never be given internally or used hypodermically, as when so used it is highly poisonous.

1 and 5 Grm. Vials,
per grm., \$0.40.

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HYPNAL-HOECHST.

(Chloralhydrate-Antipyrin.)

This combination of chloralhydrate and antipyrin was first prepared by Bardet and introduced into therapy under the name Hypnal as a hypnotic. The investigations carried out by Filehne and Herz with this new remedy re-

vealed the facts that the action of chloralhydrate upon antipyrin yields various products, some of which are active and some inactive; these two classes exhibit a different chemical constitution. The Hypnal of the shops, as used originally by Filehne and Herz, fuses at 194° C., gives no reaction with antipyrin, and physiologically is quite inert.

Hypnal-Hoechst, the only product offered in the United States, on the contrary, which contains 2 more atoms of hydrogen and 1 more of oxygen than the trade product, exerts its physiological action promptly and merits the name "Hypnal."

Preparation : Hypnal-Hoechst is prepared by allowing chloralhydrate to act upon antipyrin.

Chemico-physical properties : Hypnal-Hoechst presents pure white crystals which fuse at 66° to 67° C. These dissolve readily in hot water, and more slowly in cold water (1 : 10). Aqueous solutions of Hypnal-Hoechst give with ferric chlorid or sodium nitrate the well-known antipyrin reaction.

Pharmacology : The hypnotic, quieting action of Hypnal-Hoechst does not depend alone upon its chloralhydrate content (45% as against 55% antipyrin); for the doses given to animals are not essentially stronger than the ordinary doses of chloral, although containing double the quantity of the latter. For rabbits the active dose of chloralhydrate is 0.75 gm.; while 1.65 gm. of Hypnal-Hoechst (containing 0.75 gm. chloralhydrate) causes a different picture; the prostration is more insignificant, etc. When both substances are given in larger doses, for example, 1.0 gm. chloralhydrate and 2.2 gm. Hypnal-Hoechst (which also contains 1.0 gm.

chloralhydrate) the chloralized animal is deeply stupefied, while the hypnalized animal can be roused by sensory irritants.

In animal experiments, especially in rabbits, small doses of chloralhydrate show injury to vasomotion and the heart-beats. Yet moderate doses of Hypnal-Hoechst do not produce these effects. Only when Hypnal is given in large quantities does the chloral produce its natural effects, and then in a lesser degree than the proportion of chloral demands.

Indications : Hypnal-Hoechst may be recommended as a mild and usually efficacious hypnotic, indicated in mild degrees of cerebral excitement, in commencing delirium tremens, in chorea minor, essential insomnia, and that caused by pain.

Dosage : Hypnal-Hoechst has so little taste that it may be given in simple aqueous solution. If necessary, syrup of orange peel, or an aromatic tincture may be added. For adults the required dose is 1.0 to 1.5 to 2.0 or even 3.0 gm. The hypnotic action sets in in from 10 to 30 minutes.

Formulae :

R	Hypnal-Hoechst	10.0
	Solve in aqua destil	100.0

S. Tablespoonful evenings (equal to 15 c.cm. solution and 1.5 gm. Hypnal). If necessary half a spoonful half an hour later.

R	Hypnal-Hoechst	10.0
	Syrup aurant. cort.....	20.0
	Aqua destil.	80.0

M. S. Give as above.

R	Hypnal-Hoechst	1.0
	Ft. pulv. tal. dos. No. x.	

S. One or two powders every evening.

1 oz. bottles,
per oz., \$1.75.

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ISOFORM.

(*Para-iodo-anisol.*)

Following the trend of modern surgery, which has of late again turned from asepsis to antisepsis, the demand has been created for an energetic antiseptic which shall, however, be noninjurious to the whole system. The investigation of a large series of compounds of various kinds by Bernard Heile, of the Surgical University Clinic and the Clinical Division of the Physiological Institute of Breslau, showed that this preparation is remarkably suitable for employment in surgical practice.

Para-iodo-anisol, which for brevity has been termed Isoform, is a colorless powder having a slight anise-like odor. It is difficultly soluble in water, practically insoluble in alcohol, ether, etc., and may be heated in the dry state to about 200° C. without decomposition. According to all experiences to date it is nontoxic when used externally as well as when given internally in doses up to as much as 8 to 30 grains daily.

A large number of substitutes for iodoform have been introduced, based upon the assumption that it gives off active iodine in the body and while not without merit—many of them—it has been shown by Heile that iodoform owes both its bactericidal and toxic action to the formation of di-iodo-acetylides during the

decomposition of the iodoform in the body, exclusion of air being necessary.

While iodoform possesses the power of arresting the development of pathogenic germs and of neutralizing their toxins, it is not a true bactericide; besides it has the disadvantage of causing decided toxic action, when long continued or large quantities are used.

Corrosive sublimate, phenol (carbolic acid), formaldehyde, and alcohol destroy bacteria *in vitro* (in the test tube), but in wound secretions which contain albumin this action is more or less inoperative, because the bactericidal action is neutralized by the albumin.

Tested, mixed with fresh warm pus containing staphylo- and streptococci and bacillus pyocyaneus, it was found that a 10 per cent. strength of Isoform arrested the growth of all bacteria. In less concentrations this action was somewhat restricted. These and other experiments clearly showed that Isoform is a stronger antiseptic than any heretofore in use and further that it is nontoxic. Heile took it internally for several days in daily doses of 2 to 3 grams, without any other result than loss of appetite.

Isoform is essentially an oxidizing agent, owing its bactericidal action to the giving off of free oxygen. In contradistinction to iodoform it acts not only in a medium free from oxygen, but in conjunction with free access of air. The fact that Isoform is devoid of the objectionable and tell-tale odor of iodoform, that it is a true antiseptic, germicide and deodorant, will appeal to the general practitioner as well as to the surgeon for the treatment of all wounds, abscesses, ulcers, carcinomas, epitheliomas, etc.

Isoform is offered as follows:

Isoform Powder: Isoform pur., Calc. phosph., equal parts.) Is a powerful antiseptic, not merely a dusting powder for wounds like dermatol, etc. Upon wounds with very little or no secretion it produces a scab by superficial corrosion. On further treatment with Isoform powder the scab is thrown off naturally by the clean granulations developed underneath. Badly infected ichorous wounds are cleansed by the influence of Isoform powder.

Isoform powder is an excellent deodorant. It is absolutely nonirritant to the unbroken skin and causes no eczema.

Isoform Paste: (Isoform pur., Glycerin, equal parts.) Serves for reliable sterilization of the hands. After the hands have been disinfected in the usual way, 15 to 20 grains of Isoform paste are thoroughly rubbed into the skin and around the nails, into small cracks, etc., as well as into the skin of the part to be operated on, especially in cases where in consequence of pathological changes sterilization according to the usual methods is not possible.

Isoform powder and Isoform paste may be used for the preparation of ointments, emulsions, suspension in glycerin, pessaries, etc., 2 per cent. Isoform powder with vaselin or lanolin, or 2 per cent. emulsions for the treatment of affections of the bladder (cystitis).

Isoform Gauze: Serves for tamponing open wounds, 1 per cent. Isoform gauze being employed for the after-treatment of so-called aseptic and but slightly infected wounds and for intraabdominal treatment.

Three per cent. Isoform gauze for the treatment of badly infected and profusely secreting wounds. In the case of very profuse secretions

it is recommended to assist the action of the Isoform gauze by dusting Isoform powder upon the surface.

For the impregnation of gauze Isoform paste is used (Isoform pur., glycerin, equal parts).

25 Grm. Bottles,
per bottle, \$0.85.

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LANOLIN "LIEBREICH."

(*Adeps Lanæ.*)

Under the name of *Adeps Lanæ*, wool fat was made officinal in the United States Pharmacopeia in 1890. It is also officinal in the German and British Pharmacopeias. In all it is the hydrous product which is recognized.

The United States Pharmacopeia declares that it should consist of not more than 30 per cent. of water added to Anhydrous Lanolin or wool fat. This is accomplished by placing the Lanolin in a warm mortar and gradually adding the distilled water with constant stirring.

The chemistry of Lanolin is so well known that it would be out of place to give any part of it here, or to attempt a history of its medi-

nal application. Suffice it to say that wool fat has been used for centuries, but not until Prof. Liebreich devised a process for its purification was it used to any great extent, because of its unpleasant odor and irritating qualities. The principal reasons why it has become so popular as a base for all ointments are:

(1) Its stability or resistance to the agents which produce rancidity.

(2) Its property of taking up large quantities of water without losing its consistency.

(3) Its property of absorption by the skin carrying with it all soluble salts and such remedies as are given for their systemic effects.

(4) Its resistance to microorganisms.

When used as a base for the application of potassium iodid or iodin, these products are recoverable from the urine in a comparatively short time, showing its quick absorption. It is indicated whenever it is desired to saturate the skin with fat, and when one wishes to carry into the system medicaments intended to produce systemic effects. Its quick and almost complete absorption makes it essential that the product should be entirely free from irritating fatty acids or decomposition products as possible, else they become a source of much mischief.

Not only is Lanolin Liebreich an ideal base for application through the skin, but the mucous membrane as well.

As a base or vehicle for the administering of remedies for syphilis, rheumatism, malaria; when it is desired to prevent the ill effects arising from disordered digestive functions, in skin diseases of whatever nature, as a base for all officinal ointments which are apt to be kept for some time, and changes are sought to be

avoided, Lanolin Liebreich will be found of inestimable service.

In order to secure the original and reliable product and thus obtain the best results, specify when prescribing: Lanolin "Liebreich."

LYSIDIN.

(*Ethylene-ethenyl-diamin hydrochlorid.*)

Lysidin is a bright red crystalline mass, very hygroscopic, having a peculiar mouse-like odor, melts at 105° C., boils at 198° C. Because of its extremely hygroscopic nature, it is marketed only in the form of a 50 per cent. solution. This is a pale yellowish liquid of soap-like feeling, with a specific gravity of 1.054. It precipitates solutions of mercuric chlorid and iodid, which are soluble in excess of Lysidin. Ferric chlorid forms a brown precipitate soluble in excess of the reagent. One gram of Lysidin (cryst.) requires 5 cc. of normal hydrochloric acid V. S. for neutralization, phenolphthalein being the indicator. It is recommended as a solvent for uric acid deposits, being given in doses of 1 to 5 gm. (15 to 75 gr.) daily, dissolved in excess of carbonated water.

1 Ounce Bottles, 50% Solution,
per oz., \$2.00.

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MIGRAININ.

(*Phenozon-caffein citrate.*)

Migrainin is phenozon-caffein citrate and occurs as a white crystalline powder, readily soluble in water and alcohol. The solutions are slightly acid. It is used in migraine, headaches of influenza, in neuralgia, sciatica, following alcoholic excesses, nicotin poisoning, etc.

In the treatment of migraine with phenacetin or antipyrin, the attack is delayed, while with Migrainin it is usually permanently stayed. In those attacks consisting of typical hemi-crania, gastric or gastrointestinal disturbances, anorexia, nausea, vomiting, meteorism, feeble and slow pulse, photophobia, and general depression, amounting at times almost to unconsciousness, Migrainin will invariably meet the indications without effect upon the pulse or heart. One author describes the action of Migrainin as follows:—"A few minutes after taking the remedy, a sensation of relief begins to make itself felt, as if the worst of the attack had passed. This assurance of relief becomes more distinct for the next quarter of an hour, frequently accompanied by a pleasing sensation of warmth, with a slight perspiration. In twenty or thirty minutes all pain has practically disappeared, and complete recovery is effected within an hour, the general sensation of comfort lasting all day, and insuring a good night's rest."

For adults the dose of Migrainin, in all forms of headaches, is seventeen grains, preferably dissolved in a small glass of water, without

additional quantity of water following. It should never be given in wine, beer, tea, or other liquids. In most cases the patient should rest quietly for an hour and a half after the powder is taken. If necessary, a second dose may be taken only in two hours. The remedy should be taken early, or directly after the first signs of headache appear, and if possible on an empty stomach. Nothing should be eaten, nor drink of any kind taken for at least two hours after the remedy has been given. More than three powders in twenty-four hours are useless.

1 Ounce Tins,
per oz., \$1.65.

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NOVOCAIN.

(*P*-aminobenzoyl-diethyl-amino-ethanol hydrochlorid.)

The continual extension of the field in which local anesthetics are employed in surgery and its special branches has brought about a more vivid appreciation of the many drawbacks associated with the use of cocain. Although some of the substitutes for cocain already introduced have exhibited advantages in one or the other direction, none of them have fulfilled the principal condition, viz., the abso-

lutely nonirritant action which is of critical importance for the general utility of a local anesthetic. The substitutes for cocain all possess decided irritant action upon the living tissues, which amounts to a corrosive action when concentrated solutions are employed.

Zealous endeavors have for years been directed to the production of a substitute for cocain useful for all purposes, relatively non-toxic and absolutely nonirritant. After many investigations the Farbwerke vorm. Meister Lucius & Bruning, Hoechst a. Main, Germany, have succeeded in constructing a chemical compound, Novocain, which thorough tests of a pharmacological and clinical nature have demonstrated to be an excellent anesthetic and absolutely nonirritant drug.

Novocain is a local anesthetic which exhibits an absence of irritation almost ideal, even when applied in powder form or in concentrated solution to fresh wounds or to the most delicate tissues such as the cornea.

Physico-Chemical Properties. Novocain is the hydrochlorid of p-aminobenzoyl-diethyl-amino-ethanol and crystallizes from alcohol in colorless needles possessing a melting point of 156° C. It can be heated without decomposition to 120° C. It dissolves in equal parts of cold water, and the solution possesses a neutral reaction; in cold alcohol it dissolves in the proportion of 1:30. Caustic alkalies and their carbonates precipitate the free base from the aqueous solutions in the form of a colorless oil which soon solidifies to a crystalline mass; on the other hand sodium bicarbonate mixes with the aqueous solution without causing turbidity. Alkaloidal reagents, such as potassium-mercuric iodid, picric acid, and potassic-iodid iodine

solution, produce precipitates even in very dilute aqueous solutions of Novocain.

The pharmacological investigations of Novocain gave the following results. The drug possesses the same reaction upon the peripheral sensory nerves as cocain; the 0.25 per cent. solution suffices to anesthetize even the thick nerve trunks, such as the sciatic nerve, in about 10 minutes. Applied locally Novocain produces no by-effect; and particularly there are no symptoms of irritation whatever.

The general effect of Novocain on the system after its absorption is scarcely perceptible, neither the circulation nor the respiration being affected. The cardiac activity does not suffer. Practically no changes are observed in the blood pressure and respiration curves traced by the kymograph, when 0.15 or 0.2 gram Novocain is injected subcutaneously into rabbits.

Novocain produces no mydriasis, no disturbance of the accommodation and no increase of intraocular pressure.

The slight toxicity of Novocain may be easily recognized by comparison with the fatal dose of cocain per kilo body-weight of different animals.

The lethal doses per kilogram body-weight (subcutaneous) are:

	Cocain	Novocain
Rabbits.....	0.05-0.1 gm.	0.35-0.4 gm.
Dogs.....	0.05-0.07 gm.	0.25 gm. (not fatal)

Careful experiments with frogs, rats, and cats indicate similar relations not only for subcutaneous but also for intravenous injections. The introduction of Novocain into the spinal cord likewise proves the slight toxicity of the

drug. In this form of application the lethal doses are for cats 0.018 gram cocain, whilst 0.15 gram Novocain is not lethal.

These experiments prove that in all forms of employment Novocain is about six times less toxic than cocain.

The pharmacological and clinical trials show further that Novocain not only does not reduce the action of suprarenal substances, but on the contrary increases it. This behavior of Novocain is remarkable, as the investigations of Braun, Bier, and others have demonstrated that the addition of suprarenal substances to the solutions of local anesthetics is of great influence on their action. It has therefore become an essential requirement for any substitute for cocain that it shall not in the least affect the action of these products.

This requirement has, however, not been complied with by any of the cocain substitutes introduced before the discovery of Novocain.

INDICATIONS AND DOSAGES.

The indications for Novocain are the same as for cocain.

For injections into the tissues in surgery the four Novocain-suprarenalin or adrenalin solutions recommended by Professor Braun are preferably employed:

Solution I: Novocain 0.25 gram—Physiological salt solution 100 grams—suprarenalin or adrenalin solution 1:1000, 5 drops.

Solution II: Novocain 0.25 gram—Physiological salt solution 50 grams—suprarenalin or adrenalin solution 1:1000, 5 drops.

Solution III: Novocain 0.1 gram—Physio-

logical salt solution 10 grams—suprarenalin or adrenalin solution 1:1000, 10 drops.

Solution IV: Novocain 0.1 gram—Physiological salt solution 5 grams—suprarenalin or adrenalin solution 1:1000, 10 drops.

Solution II diluted with an equal volume of physiological salt solution gives solution I. Solution IV diluted with an equal volume of physiological salt solution gives solution III.

For infiltration anesthesia and for anesthesia of the thick layers of tissue, the Novocain-solutions I and II are employed.

For central anesthesia of the nervous system and larger nerve trunks, as well as for dental extractions, solutions III and IV are employed.

For medullary anesthesia, experience so far gained has shown 5 per cent. Novocain-suprarenalin or adrenalin to be most useful. It will contain in each 3 cc.:

0.15 gram Novocain—0.000325 gram suprarenalin or adrenalin—corresponding to 5 drops solution 1:1000 to 3 cc. sterilized distilled water.

Of this isotonic solution 2 cc. = 0.1 gram Novocain is employed for operations on the intestines and genitals; 2.5 to 3 cc. = 0.125 to 0.15 Novocain in laparotomies.

In ophthalmic practice 1, 5, and 10 per cent. Novocain solutions find employment and produce no dilatation of the pupils. If desired, there may be added to each 10 cc. of the solutions 6 to 8 drops of suprarenalin or adrenalin solution 1:1000.

In rhino-laryngology 5 to 10 per cent. solutions are employed for anesthesia of the mucous membranes; 10 to 20 per cent. Novocain solutions for anesthesia of the larynx and pharynx, to which in suitable cases 3 drops of suprarenalin

or adrenalin solution 1:1000 may be added per 1 cc.

In dental practice 1 to 2 per cent. Novocain solutions are employed. For 1 or 2 extractions 1 to 2 cc. 2 per cent. Novocain solution is used, to which 2 or 3 drops of suprarenalin or adrenalin solution 1:1000 is added. With 5 cc. of 2 per cent. Novocain solution and 5 drops suprarenalin or adrenalin solution 1:1000, the whole of the alveolar structure may be rendered insensitive at one time. For dentine anesthesia, separation, cleaning, and for crowning teeth, etc., 1 per cent. Novocain solution suffices, to which may be added as occasion arises 1 to 3 drops of suprarenalin or adrenalin solution 1:1000, viz., 1 to 2 drops for dentine anesthesia in the upper jaw and 3 drops for the same purpose in the lower jaw.

For internal medication Novocain is preferable to cocain on account of its lower toxicity, and to adults doses up to 0.5 gram may be administered.

As already mentioned, Novocain solutions may be sterilized by boiling without decomposition or loss of activity. If suprarenalin or adrenalin is also added to the Novocain solutions they ought not to be boiled, or at least for only a short time, as the active substance of the adrenals loses in activity by long continued boiling.

Syringes sterilized with sodium carbonate solution must be rinsed with sterilized water or physiological salt solution before Novocain solutions are drawn in, as sodium carbonate precipitates Novocain.

5 Grm. Vials, per vial, \$1.00.

1 Ounce Bottles, per oz., 4.00.

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NUTROSE.

(Casein-sodium.)

Nutrose is prepared from casein of milk, which is combined with alkali sodium converting the casein into a colorless, tasteless powder, which is completely soluble in water and all watery fluids. It contains 13.8 per cent. of nitrogen and is used as a food in intestinal and digestive disturbances, in convalescence from wasting diseases, and after surgical operations.

The indications for the employment of casein preparations such as Nutrose are numerous. In tuberculosis and all wasting diseases, cardiac and renal affections, cachexia from whatever cause, constitutional anemia and after hemorrhages, and in all affections where it is desirable to increase the albumen contents of the foods imperceptibly. When there is repugnance to flesh food, as in chlorosis, diabetes mellitus, etc., and in convalescence, in order to introduce as much easily assimilated food as possible, after operations upon the rectum, where a less voluminous diet is desired, in febrile diseases, where only fluids can be taken, and in gout and uric acid diathesis, when we are enabled to convey to the system the necessary quantity of albumen without the nuclein, which makes meat an objectionable diet. In the numerous diseases of the alimentary canal, Nutrose will be found especially useful. Stenosis of the esophagus, whether from stricture or from carcinoma, when milk cannot be given, much less solid food, the milk forming cheesy coagulations above the diverticulum.

In diseases of the stomach, when there is

diminution or failure of hydrochloric acid in the secretion, from whatever cause, this remedy will afford certain relief. In such cases, the digestion of meat, eggs, and often milk, will be found most difficult, and a partial, at least, substitution of these albuminoids is most desirable. In simple gastritis and in nervous anacidity, it is easily assimilated, affording no hindrance to intestinal digestion, thus avoiding the later complications of intestinal insufficiency and compensatory disturbances.

In gastritis with lack of hydrochloric acid, the digestion of meat is accompanied with subjective and objective disturbances, such as painful pressure, wind, eructations, nausea, and vomiting. These symptoms may increase if the secretory weakness is accompanied with debility by development of atony of the walls of the stomach. In stenosis of the pylorus, simple or carcinomatous, complicated with anacidity, artificial nutrient preparations are indicated, as meat, eggs, and milk, often cannot pass undigested the contracted pylorus, and consequently undergo decomposition. The ability of Nutrose to combine with the acid makes it especially a desirable nutriment in hypersecretions of hydrochloric acid and in ulcer ventriculi. Finally, in chronic diarrhea, where all meats must be avoided, the deficit of albumen can be made up by administering Nutrose.

It may be given in the form of enemata in aqueous solutions with the addition of salt, and as an addition to the ordinary egg and milk enemata.

Nutrose is preferably administered in soups ($\frac{1}{3}$ to $\frac{1}{2}$ ounce to each plateful), milk, coffee, cocoa ($\frac{1}{3}$ ounce to each cupful), or when less

liquid and more solid food is indicated, with barley, rice, oatmeal, etc., $\frac{1}{2}$ to $\frac{3}{4}$ ounce with each portion. Nutrose can also be given with jellies and creams.

1/4 lb. Cartons, per carton, \$1.25.

1 lb. Cartons, per carton, 3.75.

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ORTHOFORM.

(*Meta-amido-para-oxybenzoicacid-methylester.*)

Orthoform is a white, voluminous, odorless, tasteless, and nonhygroscopic powder, which is but slightly soluble in water, readily so in alcohol, ether, and collodion. It is anesthetic, slightly antiseptic, styptic, and vulnerary.

Therapeutic Indications: As a local anesthetic Orthoform has been found useful in relieving pain of wounds, ulcers, burns, excoriations, and all exposed nerve endings. It has been successfully employed to relieve pain in transplantations, burns of the second and third degree, varicose ulcers, open wounds, carcinoma, ulcerations of the throat, whether specific, tubercular, or otherwise; in dental caries, keratitis, corneal ulcer, or conjunctivitis; for hemorrhoids, either before or after opera-

tions; in all surgery where there are exposed nerve terminals through loss of tissue, or highly inflamed surfaces.

Orthoform has become indispensable to the surgeon-dentist in treating cavities previous to filling. When the débris is carefully removed and Orthoform applied to the cavity, pain will at once be allayed and for hours, thus facilitating exploratory operations or painless filling. It is also serviceable in packing cavities after extraction, to quiet pain, and this is accomplished without interference with a proper healing of the tissues.

Its slow solubility in the tissue fluids allows of a continuous anesthetic effect, without the caution and observation necessary when using cocain, and without the danger of contracting a drug habit. There is no secondary hyperemia or other untoward sequela such as often follows the use of cocain. Is sufficiently antiseptic to prevent fermentation or putrefaction; limits and modifies the secretions.

Orthoform is incompatible with silver nitrate, and the organic silver albuminoid preparations, with formaldehyd, permanganate of potash, antipyrin, and bismuth subnitrate with which it forms a chocolate-brown powder. It can, however, be combined with solutions of mercuric chlorid, tincture of iodine, turpentine, solutions of copper sulfate, iodoform, dermatol, zinc oxid, eucophen, aristol, calomel, and salicylic acid. It is also applicable with 3 to 5 per cent. solutions of phenol (carbolic acid) and with lysol or creosol solutions.

Dose and method of using: Orthoform may be given internally for pain in gastric ulcer or gastralgia in from 0.2 to 0.64 gm. (3 to 10 grs.). As a powder in insufflation, in emulsion, or

tablet form—tablets to be allowed to dissolve slowly in the mouth before swallowing—in tubercular or syphilitic laryngitis for dysphagia; as a sprinkling powder, pure or mixed with talcum, or finally as an ointment 10 per cent. Care should be taken when using Orthoform ointments to remove all débris from the wound by washing with, preferably, dilute alcohol before applying it.

ORTHOFORM FORMULÆ.

R Orthoform 10.0 (gr. cl.)
Sig.—Sprinkling powder.

R Orthoform 10.0 (gr. cl.)
 Talcum q. s. ad 50.0 (3 iiss.)
M. ft. pulv.
Sig.—Sprinkling powder.

R Orthoform 5.0 (gr. lxxv.)
 Ether q. s. ad sol.
 Ol. amygd. dulc. 20.0 (3 v.)
Sig.—For application to excoriated nipples.

R Orthoform 5.0 (gr. lxxv.)
 Menthol 10.0 (3 iiss.)
 Ol. Olive 100.0 (3 iij. 3 i.)
Sig.—Inhalations for tubercular or syphilitic laryngitis.

R Orthoform 1.0 (gr. xv.)
 Sacchar. lactis 4.0 (3 i.)
Sig.—Snuff for hayfever, coryza, etc.

R Orthoform 2.5–5.0 (gr. xxxviiss.–lxxv.)
 Lanolin 25.0 (3 vi¼.)
M. ft. ungt.
Sig.—Orthoform salve.

R Menthol 10.0 (gr. cl.)
 Ol. Amygd. dulc. 30.0 (3 viiss.)
 Vitelli ovi 30.0 (3 viiss.)
 (Two yolks.)
 Orthoform 12.5 (3 iij. gr. viij.)
 Aq. dist. q. s. ad 100.0 (3 iij. 3 i.)
Ft. Emulsion for tubercular laryngitis. (Freudenthal.)

Orthoform hydrochlorid is a soluble salt and is used whenever it is desired to make the application in aqueous solution. These aqueous solu-

tions, however, are necessarily somewhat acid and therefore apt to be irritating when applied.

Orthoform, 1 Ounce Bottles, per oz., \$1.60.

Orthoform Hydrochlorid:

1 Ounce Bottles..... per oz., \$2.00.

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OXAPHOR.

(*Oxycamphor*.)

Oxycamphor is one oxidation removed from camphor; one hydrogen atom of the camphor molecule being displaced by one of the group of hydroxyls. It appears as a crystalline powder, melting at 203° to 205° C., soluble in cold water up to 2 per cent., more readily in hot water. The solution has a slight peppery bitter taste and smell; should be free from a camphor odor, and aqueous solutions should not show oily appearing globules upon the surface. The solution should be neutral and without per-

ceptible sensation upon the mucous membrane. Solutions of albumin are not changed by oxycamphor, but myosin in solution is precipitated in small flakes, which finally ball together and settle to the bottom of the container. Physiological experiments show that the ameboid movements of the white blood corpuscles are retarded in a solution of oxycamphor. It easily decomposes when exposed to light or water, for which reason it is offered only in a 50 per cent. solution in alcohol. This solution is marketed under the name of Oxyphor.

Therapeutically the action of oxycamphor (Oxaphor) is directly opposite to that of camphor, for while camphor is an excitant of the functional centres of the medulla oblongata, oxycamphor allays the excitability of the respiratory centres; hence it is useful in dyspnea arising from whatever cause, such as circulatory disturbances, insufficient heart action, organic or valvular lesion, in aneurysms, whooping cough, and asthma.

INDICATIONS AND DOSAGE.

Oxaphor is administered in dyspnea arising from defective circulation or respiratory troubles, in nervous asthma, in shortness of breath from uremic complications, in emphysema and bronchitis; further in organic disease of the heart with compensation disturbances and symptoms of congestion, and in advanced cases of pulmonary phthisis.

As a single dose, 40 to 60 drops of Oxaphor (equivalent to 15 to 25 grains Oxycamphor) should be given in a spoonful of water. The flavor, which to some patients is unpleasant, is removed by a draft of water. The most favor-

able conditions for the rapid and energetic development of the action of the drug is when taken on an empty stomach in fairly large doses.

The single dose is 15 to 25 grains Oxycamphor, with a maximum of 60 grains in the day, or double the quantity of Oxaphor. The following prescriptions have proved acceptable:

1. R	Oxaphor.....	3 iij.
	Spirit. vini.....	3 vi.
	Succ. liquir.....	3 iij.
	Aqu. destill.....ad	3 vi.
2. R	Oxaphor.....	3 iij.
	Aq. amygd. amar.....	3 i.
	Cognac.....	3 vi.
	Aqua destill.....ad	3 vi.
3. R	Oxaphor.....	3 iij.
	Spirit vini.....	3 ix.
	Syrup. aurant.....	3 vi.
	Aqua destill.....ad	3 vi.
4. R	Oxaphor.....	3 iij.
	Vini Hungar.....	3 xvij.
	Syrup. simpl.....	3 ix.
	Aqu. destil.....ad	3 vi.

Of any one of these solutions a tablespoonful contains 8 grains Oxycamphor, and, according to the above tables of doses, two tablespoonfuls should therefore be prescribed as a dose.

1 Ounce Bottles, 50% Solution,
per oz., \$1.75.

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PEGNIN.

Dr. von Dungern's method of making cow's milk, with the aid of Peginin, more digestible for sick or healthy infants, as well as for children and adults, rests on a process for preventing the injurious and lumpy curdling of the casein of the milk in the stomach. The large curds, which are formed in the stomach after partaking of milk, are by the application of von Dungern's method formed before the milk is taken, and can, therefore, be easily reduced in size by shaking or agitating with an egg beater. The casein of milk so treated will be in small particles and more easily and quickly digestible.

Peginin is sterile, and contains no substance which could retard digestion. It adds to the milk, lactose, or sugar of milk, which, as is well known, makes it more nearly resemble the mother's milk.

The researches made with Peginin at noted clinics by those practising pediatrics, have demonstrated that von Dungern's method of making cow's milk more digestible, is worthy of the greatest consideration as the product is easily digestible. Milk so treated can be taken by invalids, as well as healthy infants, children, and adults, rapidly increasing the bodily strength and weight.

The milk must be lukewarm when the Peginin is added (40° C. or 104° F.), and must not be heated afterward; low temperature retards the curdling of the milk, and too high temperature destroys the effect of the powder. The addition of water before the curdling has set in is to be avoided, as this will interfere with the process.

It is well to reduce the size of the lumps of casein by shaking in a strong bottle large enough to allow of shaking; or in other words, in a bottle not nearly filled. To prepare the milk needed for one day requires a bottle with the capacity of about one or one and one-half liter (two or three pints). If a sterilizer, such as Arnold's is to be used, the milk must be made to curdle in each separate bottle, and then shaken before using.

In every way the same rules apply which must be observed when using cow's milk as nourishment for infants and invalids. These must be directed principally with a view to keeping all injurious germs from the milk, and to make those already present harmless. The milk must for this reason only be taken after being boiled and subsequently treated with Pegrin as below. All vessels used must be kept scrupulously clean by boiling with soda. The stoppers of the bottles must be boiled before using for 15 minutes. To save trouble, all stoppers which are to be used for one day may be boiled at the same time, and left in the vessel until used. As needed, a stopper can then be used, but must not afterward be put with the unused ones.

If the milk is to be used for nourishment of infants, it must be given at body temperature (about 37.5° C. or 100° F.). Hot milk is injurious, while infants do not like cool milk. For this reason milk is best prepared in the following way:

1. All bottles and stoppers must be well cleansed by boiling.

2. The milk to be used for one day must be placed in a large bottle (the bottle should not be entirely full), the bottle placed in a vessel

containing cool or lukewarm water, and the water boiled for one-half hour.

The milk for infants must not be diluted with water.

3. The milk after boiling must be cooled to about 40° C. or 104° F. To avoid breaking the bottles, this must not be done suddenly. If the milk is too cool, it must again be heated to 40° C. or 104° F.

4. At this temperature the Pegnin is added, about one even tablespoonful or 9 gms. (135 grs.) to one liter or quart. After shaking the milk to which the Pegnin has been added for a short time, wait until it curds. This will happen in a few minutes, usually two or three minutes. (If the milk does not readily curd, it is usually because of the addition of water.)

5. After the milk has curdled, the bottle is closed with a clean, previously boiled stopper (one of glass or solid rubber is best) and shaken vigorously for a few minutes or until the curds have entirely disappeared.

6. The milk is now ready for use. It must not again be heated to any extent. If it is necessary to dilute the milk with water as for instance for very young children, this can be done now, but not more than an equal proportion of water to milk must be added. It is better to use water which has been previously boiled.

Milk so prepared must now be placed in a cool receptacle without changing from the original bottle. When the milk is to be used, it is again shaken, and placed in the infant's feeding bottle, heated to body temperature, 37.5° C. or 100° F. and thus given to the child.

The heating is best done in lukewarm water, for strong heat will again produce the large

curds. When this happens, it must again be thoroughly shaken while in the feeding bottle. If the milk be thus prepared, it can easily be taken through the small opening of the rubber tube. If the curds are in large lumps, however, it may be necessary to have a large opening in the nipple. This can be made by cutting a long slit-like opening.

4 Ounce Bottles,
per bot., \$0.75.

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PYRAMIDON.

(*Dimethyl-amido pyrazolon.*)

Pyramidon and its compounds with Camphoric Acid and with Salicylic Acid.

Pyramidon as an Antipyretic: Pyramidon, an almost tasteless white powder, very soluble in water, is a chemical derivative of antipyrin. The leading idea in the preparation of this compound was the development of the physiological action of antipyrin by the introduction of the admittedly very active dimethylamido group (Filehne). This has proved a practical success; Pyramidon is a very energetic drug—about 3 or 5 times more powerful than antipyrin—in which the danger of by-effects are reduced to a minimum owing to the small dose (4 to 6 grains) required to produce the therapeutical effect. The small quantity of the medicament administered also obviates any burden on the digestive organs. Comparing its antipyretic action with that of antipyrin, Pyramidon answers in still fuller degree than antipyrin to the requirements of a good febrifuge, namely, that the disappearance of the fever is gradual and the subsequent rise in temperature as its effect passes off is slow. This explains the decided preference given to Pyramidon by the most competent observers in the treatment of pulmonary tuberculosis and typhoid.

Professor Kobert, who has administered Pyramidon more than 6,000 times to consumptives and has made a strict comparison of its action with other antipyretics and antineuralgics, such as quinin, euquinin, antipyrin, phenacetin, lactophenin, antifebrin, salipyrin,

and tolipyrin, comes to the conclusion that Pyramidon is by far the best of these remedies.

Similar comparative trials were made by Roth in the IV. Medical Department of the Rudolf Institute in Vienna. He also came to the conclusion that none of the other numerous antipyretics are so prompt and lasting in action as is Pyramidon in checking the evening rise of temperature in consumptives. He writes: "Undoubtedly it is the most reliable of all antipyretics in the fever of tuberculosis. Often attempts were made to avoid the daily rise in temperature with other antipyretics, as phenacetin, phenocoll, antifebrin, quinin, and quinidin, etc., but almost always the effects of such administration were insufficient and often an utter failure. The administration of Pyramidon was then generally followed by most astonishing results, including apyrexia even for some days after discontinuance of the drug."

Similar good results were obtained by all clinicians and physicians who treated their patients with Pyramidon, as reference to the publications cited below will prove.

A scientific communication by Hoffman, from the Pharmacological Institute of the University of Rostock, must also be mentioned. He writes that Pyramidon is to be preferred to the nearly related antipyrin "not only because it reduces the fever in very small doses (3 to 5 grains), but also because it rather strengthens than weakens the heart's action." By these pharmacological investigations of Pyramidon the practical experience of medical men with the preparation have been corroborated.

The abatement of the fever in consumptives in the morning is, as is well known, often accompanied with violent sweats, whether an

antipyretic has been given or not. In order to avoid or at least control these secretions, which are not only very unpleasant but also distinctly harmful to the patients, two salts of Pyramidon with camphoric acid are offered, namely, the neutral camphorate of Pyramidon, in which the antipyretic action predominates, and the acid camphorate of Pyramidon, in which the antihydrotic action is prominent. Both preparations have likewise answered very well in the therapy of phthisis, and especially is the prevention of sweats obtained by the administration of the acid camphorate of Pyramidon. The doses of these salts are:

Neutral Camphorate of Pyramidon.....gr. 8 to 12
 Acid Camphorate of Pyramidon.....gr. 12 to 15.

Professor Valentini expresses himself as follows respecting the systematic antipyretic treatment of typhoid fever with Pyramidon:

1. It is possible by continued administration of doses of Pyramidon, at intervals of two hours, day and night, to maintain the temperature at normal or almost normal in all cases of typhoid fever. The pulse and sensorium are thereby very favorably affected, and the labor of nursing materially lightened.

2. Unfavorable effects of the drug have not been observed.

3. There appears to be no specific action on the disease, but we have the impression that the whole course of the disease is very favorably influenced.

4. The selection of a suitable dose, as in all cases of medication, requires a certain amount of experience. The correct dose is that which just keeps the patient free from fever. For children $1\frac{1}{2}$ to 3 grains every two hours suffice;

adults require 5 to 6 grains according to the severity of the case. Strong doses are given at the start, as an abnormal reduction of temperature to 35° C. or 95° F. does no harm. When the patient has been free from fever for some days more moderate doses are given.

5. When it is assumed that the febrile period has passed, the administration may be tentatively discontinued; it is, however, not permanently discontinued until the patient is quite free from fever.

Pyramidon as an Antineuralgic: Besides its prompt antipyretic action Pyramidon has also been found to possess anodyne properties to a greater degree than any other remedy for the relief of all kinds of pain, *e.g.*, headaches, toothache, etc., and particularly neuralgic pains. The marked analgesic action of Pyramidon, commented on by Filehne, has been confirmed by all clinicians and nerve specialists who have employed it. Thus Laudenheimer writes from the Psychiatric and Nerve Clinic of the University of Leipsic: "I have given this drug, by far the most often, in headaches of various character, headaches of an indefinite nature, such as frequently occur during many mental disorders and psychoses, and during the patient's convalescence, the drug always answering in doses of 3 to 8 grains. I have often had opportunities to try Pyramidon in the brain troubles of alcoholic patients, particularly after delirium tremens. Almost without exception the results have been satisfactory, both in the case of localized neuritic lesions, and in the continuous complaints of "an iron band round the head," "noises in the head," etc.

Professor Lépine, of Lyons, has made a com-

parison of the antineuralgic action of antipyrin and of Pyramidon. He found that Pyramidon is superior to antipyrin and frequently enough was effective when antipyrin entirely failed; for instance, in the painful twitchings of locomotor ataxia, where even morphin had given no relief, "Pyramidon alone in doses of 10 or 12 grains three or four times daily, for several weeks procured the patient a condition of absolute comfort. Although this patient received daily as much as 45 grains of Pyramidon, not the slightest harmful effect was ever observed. In the majority of patients for experimental purposes 4 grains Pyramidon and 15 grains antipyrin were given alternately, and to this day all these patients declare they prefer Pyramidon. It appears also quite certain that Pyramidon disturbs the stomach less than antipyrin."

Pyramidon is given as an antineuralgic and particularly in articular or muscular rheumatism either in powder form (5 to 8 grains thrice daily) or in a 3 or 4 per cent. aqueous solution (one teaspoonful twice or thrice daily).

Pyramidon Salicylate is indicated in *rheumatic affections*, particularly in *acute and chronic rheumatism*, *gout*, *neuralgia*; further in *pleuritis*, both *serous* and *dry*. Dose 8 to 12 grains.

Pyramidon,..... 1 Ounce Cartons, per oz., \$2.35.

Pyramidon Camphorate, Acid,
1 Ounce Bottles, per oz., 1.75.

Pyramidon Camphorate, Neutral,
1 Ounce Bottles, per oz., 2.00.

Pyramidon Salicylate, 1 Ounce Bottles, per oz., 1.75.

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RODAGEN.

Rodagen is a preparation made from the milk of goats which have been subjected to thyreoidization, which contains the active remedial substance in a concentrated form and which is permanently durable. The milk extract is triturated with 50 per cent. of milk sugar; is palatable and can be administered for any length of time without opposition on the part of the patient. It is indicated in exophthalmic goiter in doses of 5 to 10 grams (75 to 150 grains) daily. The chronic character of this disease makes it necessary to continue the remedy for usually long periods. The first noticeable symptoms to indicate improvement are an abatement of especially nervous disturbances, tremor, palpitation, insomnia, excitability, after a treatment of two to three weeks, or after from 100 to 200 grams of Rodagen have been taken.

1 Ounce Bottles,
per oz., \$1.25.

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SIDONAL.

(Quinate of Piperazin.)

Sidonal is a white amorphous powder, with a pleasant taste, very soluble in water, whose action in uric acid troubles is dependent upon the combined effect of quinic acid and piperazin; the former preventing the formation of uric acid, while the latter, through its diuretic action, causing rapid elimination of hippuric acid (which is a product also of metabolism) through the kidneys. This metabolism is so modified through the action of quinic acid that the production of uric acid is not completed, but another product, hippuric acid, formed. Acute attacks of gout are quickly influenced and cut short by Sidonal in doses of from 5.0 to 8.0 gms. (75 to 120 grs.) per day, given in broken doses and at regular intervals with copious draughts of water. There is a disappearance of pain and swelling with increased appetite, the joints becoming more mobile, while, objectively and subjectively, swellings and tophi disappear. In renal calculi and the persistent pain in the region of the kidney with the excretion of quantities of uric acid or gravel, the pains are quickly abated, while the urine becomes clear and without sediment. Sidonal does not disturb the digestion or circulation, and is indicated in all cases of acute gout, renal calculi, leucemia. In chronic conditions Sidonal new is said to be more effective than the original product.

**1 Ounce Bottles,
per oz., \$5.00.**

SIDONAL NEW.

(Quinic Acid Anhydrid.)

Sidonal new is quinic acid anhydrid, and occurs in the form of a white powder without odor or taste. It is very soluble in hot or cold water, alcohol, ether, or chloroform, and is used as a uric acid solvent inhibiting the production of the insoluble uric acid and so influencing metabolism as to form hippuric acid, which is easily soluble, and therefore readily eliminated.

Sidonal new is used in a variety of disturbances dependent upon the presence of uric acid, such, for instance, as lithemia, gout, arthritis deformans, chronic rheumatism, occipital headache, hemicrania, catarrh, asthma, and the so-called uric acid diathesis. It is best administered in solution, wafers, capsules, or in powder form washed down with copious draughts of water. Dose i. from 5 to 8 gms. (75 to 120 grs.) daily, given in three, four, or more doses.

Although it has been demonstrated by Kionka and others that the nature of the food partaken of directly influences the formation of uric acid in and excretion from the animal system, the classical researches of Weiss in the Bunge laboratories furnished the earliest exact knowledge regarding the ingredients of foodstuffs, which favor or retard the production of uric acid. Commencing with the study of the influence on uric acid excretion on the addition of definite quantities of fruit to a normal diet, Weiss found that one to two pounds of cherries, strawberries, or grapes daily, reduced the amount of uric acid excreted from 20 to 40 per cent.

Attempts to identify this peculiar property with any particular constituent of the fruit at first failed. Sugar, tannic acid, potassium tartrate, etc., did not produce any appreciable effect. At length quinic acid, which is a frequent, although minor, constituent of fruits and vegetables, was tried and found to possess a very intensive effect in reducing the excretion of uric acid. One third of an ounce of quinic acid added to the normal diet reduced the daily excretion of uric acid over 50 per cent.

The results attending the administration of Sidonal new, prove that the preventive action of quinic acid is a radical one, as pointed out by Dr. J. Meyer, of Carlsbad, in the discussion on Blumenthal's communication on Sidonal to the meeting of the "Society for Internal Medicine" in March, 1902, and that quinic acid retards the production and not merely the excretion of uric acid. Further evidence of this fact is afforded by the appearance of hippuric acid in place of uric acid in the urine of patients on fruit diet, or to whom Sidonal new has been administered.

Both hippuric acid and its salts are known to be easily soluble as contrasted with uric acid and the salts of uric acid. The manner in which the metabolic changes are effected by quinic acid so as to produce hippuric acid instead of uric acid has yet to be revealed, but from a chemical point of view it is extremely suggestive that, whilst uric acid may be built up from glycoll and urea, hippuric acid is formed by the combination of glycoll with quinic acid. Thus, it can readily be understood that quinic acid, as Sidonal new, removes a constituent necessary to the formation of

uric acid, and thus reduces the production of uric acid in the body.

Ounce Bottles,
r oz., \$2.50.

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THE TUBERCULIN PREPARATION OF PROFESSOR KOCH.

We will confine our remarks on these products to giving detailed and explicit directions for their use, asking the reader who is not acquainted with their merits or who desires the latest clinical references to them to write to us for same.

That the Tuberculins prepared according to the method devised by Prof. Koch are becoming better understood and appreciated as they are more generally used is attested from the published reports in current medical literature from the most eminent specialists, both in this country and abroad.

DIRECTIONS AND DOSAGE FOR THE USE OF TUBERCULIN "KOCH" AS A DIAGNOSTIC AGENT.

Apparatus: The apparatus needed in giving the injections is a hypodermic syringe, a pipette

of one cubic centimeter, contents graduated to one-hundredths, and the Tuberculin "Koch."

Method of Injection: The pipette being cleaned and dry, the cork in the Tuberculin bottle is removed and the end of the pipette plunged into the fluid. The Tuberculin is drawn up into the pipette to the required mark; the finger is then thrust over the end of the pipette, which is quickly removed from the bottle and the Tuberculin allowed to run out into a clean saucer, perfectly sterilized. The pipette is now washed with sufficient distilled water to make the desired percentage solution and this water is mixed with the Tuberculin in the dish. The whole is drawn into a hypodermic syringe and injected into the interscapular region of the back. The distilled water is added to give volume to the fluid.

Previous to the injection, the morning and evening temperature of the patient should have been taken for one, two, or more days, in order that any variation in its course may be known.

Patients that run more than $\frac{1}{2}^{\circ}$ C. of temperature are not good subjects for Tuberculin injections. At the time of the injection the temperature is taken and noted. Following the injection for the first six hours the temperature should be taken every two hours, and thereafter every hour until twelve hours have passed.

Dose: All clinicians, with few exceptions, use one of three methods: Those who give three or four injections repeated one after the other, with intervals of from three to seven days between the injections, the initial dose being 0.0005 to 0.001 c.cm.; the second 0.002 c.cm.; the third 0.004 to 0.005 c.cm.; the fourth 0.010

c.cm. If the patient reacts to any one or all of these injections, he is considered tuberculous. If he does not react he is not tuberculous. Martin and Robins, Malm, Denison, Trudeau, Taylor, Otis, Kassel, and others use this method.

A second class of observers use the repeated injections at stated intervals, but begin with much larger doses. For example, an initial dose of 0.005 c.cm.; the second dose being 0.010 c.cm.; the third 0.025 c.cm. Whittaker and Maragliano made use of this method.

The third method is followed by those who give but one injection, and that sufficient in amount to cause a reaction in the tuberculous individual. White, Von Yaksch, and Head pursue this plan. White gives one dose of 0.010 c.cm.; Von Yaksch one dose of 0.005 c.cm.; and Head one dose of 0.010 c.cm.

There is much to be said in favor of one large dose, rather than repeated small doses. The mild or delayed reactions, which are troublesome to the diagnostician, are in a large measure done away with and the possibility of establishing a toleration for the Tuberculin is eliminated. No opportunity for any cumulative action is offered when only one dose is given.

The Reaction: An individual is said to react when he develops within twelve hours following the injection a rise of temperature of $1\frac{1}{2}^{\circ}$ to 2° C. (2.7 to 3.6 F.) or more above the mean course of the temperature previous to the injection. Other symptoms, such as headache, malaise, anorexia, sometimes vomiting and diarrhea, accompany the temperature rise, but they are not distinctive features of the reaction.

TECHNIC AND DOSAGE IN THE TREATMENT OF
TUBERCULOSIS WITH TUBERCULIN KOCH.

The maximum dose for adults against tuberculosis of any kind should be for the first injection 0.001 c.cm., to children it is advisable to give, according to age, $\frac{1}{2}$ to $\frac{1}{10}$ of this dose.

The dose should be increased, at first, only by 0.001 c.cm. until 0.005 c.cm. is given, when it can be augmented by 0.002 c.cm., and from 0.01 c.cm. upward a more rapid increase is permissible according to the nature of the case.

As a rule the dose of 0.1 c.cm. (between $1\frac{1}{2}$ μ and $1\frac{3}{4}$ μ) should not be exceeded.

As a diluent, phenol (carbolic acid) solutions of 0.5 per cent. should be generally employed, but stronger solutions of the phenol can be used.

The dilutions are prepared by first of all making a 10 per cent. solution by adding 9 c.cm. of a 0.5 per cent. phenol (carbolic acid) solution to 1 c.cm. of the remedy. This solution will keep for a considerable time if placed in a dry, cool place, preferably a refrigerator or ice box. In the same way a percentage solution containing the required dose in each c.cm. is prepared from this 10 per cent. solution.

No more of the higher dilution should be made ready than will meet the requirements of a few days, and this should always be kept in a cool, dry place. If the solutions assume a turbid appearance, they should no longer be used.

During a few days before the treatment is begun, observations should be made of the temperature of the patient in the morning, at midday, and in the evening.

An accurate physical examination should be made of the thoracic viscera and of the larynx. The sputum must be examined for tubercle bacilli, and also the dejections, if diarrhea be present.

The injections are to be made as early as possible in the day; afterward the temperature must be taken every three hours.

If in consequence of the injection, the temperature rises above 38° C. (101° F.) the following dose should not be increased. The same dose, or a smaller one, is then employed, until for several days the temperature no longer rises above 38°. In all cases the injections should not be continued before the symptoms of reaction cease to manifest themselves.

If a higher temperature is maintained for some time, the next injection should not be made before it has fallen to at most 38° C.

In doubtful cases, or where it is a question of diagnosis, and further, in quite recent tuberculous manifestations, *e.g.*, unilateral apical catarrh, tuberculosis of a joint, lupus of restricted area, etc., a dose of 0.005 c.cm. can be given to begin with, and in case no reaction is produced, increased by degrees to 0.01 c.cm. and then to 0.02 c.cm.

According to experience, it appears advisable to begin with the smallest possible dose and to increase this gradually even in incipient pulmonary and in surgical tuberculosis.

Particular care is required in all cases of advanced pulmonary tuberculosis, laryngeal tuberculosis, extensive facial lupus (on account of the not unusual brain symptoms), intestinal tuberculosis (perforation), cerebral tuberculosis, as well as in cases complicated by heart affections, diabetes, etc.

If hemoptysis or any other serious symptom appear, the use of the remedy must be suspended.

The investigations of the sputum must be repeated every week, and it is also desirable that the weight of the patients should be determined at regular intervals.

It is to be recommended that the syringes employed (which ought to be tested as to their capacity) should be disinfected each time before and after use with absolute alcohol and afterward rinsed with sterilized distilled water.

DIRECTIONS FOR USING TUBERCULIN NEW
"KOCH."

The Tuberculin New "Koch" is presented in a fluid state. It is an opalescent fluid, which resembles externally a mixture of 10 c.cm. water and 4 or 5 drops of common milk. It must be kept in a dry, dark, and cool place.*

The original fluid contains 10 mgm. solids to each c.cm.

As a rule treatment begins with a dose of $\frac{1}{500}$ mgm. (0.002 mgm.) of solid substance. If a reaction should follow its use, the dose must be diminished.

For diluting the fluid, a 20 per cent. solution of glycerin-water should be employed. Dilutions are best effected as follows:

1. A 1 c.cm. pipette divided into 10 equal parts is used. With this 0.3 c.cm. of the original fluid is taken; to this 2.7 c.cm. of 20 per cent. glycerin-water is added, so that the total volume is 3 c.cm. This dilution of 3 c.cm.

* The Tuberculin New is the same as Tuberculin T. R. (See Koch, *Deutsch. med. Woch.*, 1897, No. 14.)

then contains 3 mgm. solid matter. The total dilution of active matter amounts to 10 per cent.

2. From this 10 per cent. dilution, 0.1 c.cm. is mixed with 9.9 per cent. of glycerin-water (20 per cent.); making a $\frac{1}{1000}$ dilution of the original substance.

Of this final dilution, $\frac{2}{100}$ c.cm. = 0.002 mgm. = $\frac{1}{500}$ mgm. solid matter.

All instruments used (syringes, pipettes) are first sterilized by absolute alcohol and ether, and later by sterilized glycerin-water, which should remove all traces of alcohol and ether.

The glycerin-water solutions should be prepared as follows: 20 c.cm. pure glycerin is boiled for 15 minutes with 80 c.cm. distilled water and then cooled thoroughly before use.

Dilutions which present a cloudy look, and which throw down a sediment which is no longer dissolved by shaking, should never be used. As a rule, properly made solutions, when preserved in a cool and dark place, should retain their activity for 14 days.

Injections should be made subcutaneously about every second day, with slow increase in dose, so that higher elevations of temperature than $\frac{1}{2}^{\circ}$ C. are avoided. If a rise of temperature follow an injection, this should subside completely before a new injection is undertaken.

If the dose does not exceed 5 mgm. solid matter, twice a week is often enough for an injection; and if the dose is larger, once a week should suffice. Generally speaking, the individuality of each case must be borne in mind.

As a rule, 20 mgms. of solid matter, should constitute a maximum for injection; and if no

reaction follows the injections must cease or only be repeated at long intervals.

Injections should be made in such regions as permit the elevation of the skin in folds. A local reaction not uncommonly sets in, but should subside in 24 hours. When the dose is to be increased the local peculiarities must be borne in mind.

**DIRECTIONS FOR USE OF TUBERCULIN NEW
KOCH (BACILLI EMULSION).**

The New-Tuberculin Koch (Bacilli emulsion) is a suspension of pulverized tubercle bacilli in water to which an equal quantity of glycerin has been added.

One cubic centimeter of the preparation contains five milligrams of the pulverized tubercle bacilli.

As a general rule the treatment is commenced with the subcutaneous injection of 0.0025 milligram of the bacillar substance, that is to say, one two-thousandth part of 1 cc. of the preparation. The dilution is made with 0.8 per cent. sodium chlorid solution, or if the diluted solution must be kept several days, with 0.8 per cent. sodium chlorid and 0.5 per cent. phenol solution, in the following way:

1. 0.1 cc. is taken from the original bottle with a 1 cc. pipette divided into 100 equal parts and to it added 9.9 cc. 0.8 per cent. sodium chlorid solution (or sodium chlorid-phenol solution). This 100-fold dilution contains 0.05 milligram bacillar substance in 1 cc.

2. Of the 100-fold dilution 1 cc. is mixed with 9 cc. 0.8 per cent. sodium chlorid solution (or sodium chlorid-phenol solution) or made up to 10 cc. therewith. This 1000-fold dilution con-

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tains in 0.5 cc. 0.0025 milligram bacillar substance, the above mentioned initial dose.

With this small dose it is quite exceptional for any reaction to appear. At intervals of one or two days the dose is very rapidly increased, on each occasion about twice to five times the quantity previously injected, until a very distinct reaction with a rise of $1\frac{1}{2}$ to 2° C. (2.7° to 3.6° F.) in temperature appears. As soon as such a violent reaction is reached the injections are made after much longer intervals. Usually one waits from 6 to 8 days or longer. If the treatment must be carried through without violent reactions the dose should only be gradually increased so that little or no rise of temperature occurs and between the injections always an interval of 5 to 7 days allowed. For further particulars reference may be made to the literature quoted below.

The subcutaneous injections are increased until the dose reaches 20 milligrams; larger quantities are not readily absorbed. If absorption takes place too slowly it is advisable to distribute the injection in two or more places. The maximum doses of 10 to 20 milligrams are only administered at intervals of 2 to 4 weeks.

(When ordering this preparation, we urgently request that to the name Tuberculin New Koch the distinctive term "Bacilli Emulsion" be added.)

Supplied only on importation order. No exchanges made.

DIRECTIONS FOR THE PREPARATION OF THE AGGLUTINATION LIQUID.

The contents of the vial consist of 0.1 gm. pulverized tubercle bacilli. A weighed quan-

tity, *e.g.*, 0.05 or 0.02, is carefully rubbed down and mixed in a mortar with phenol-salt solution (0.5 per cent. phenol (carbolic acid) and 0.8 per cent. sodium chlorid, freed from all turbidity by repeated filtration), at first by adding a few drops at a time, and then gradually more solution until the proportion of 1 to 100 is reached. It is then centrifugated six minutes with a hand centrifugal machine, decanted off from the deposit, and again diluted with a 10-fold volume of phenol-salt solution, that is to say, to the proportion of 1 in 1000. In this dilution the solution may be kept for about two weeks in an ice chamber. Before use, it is again diluted as required with a 10-fold volume of phenol-salt solution, so that the test liquid employed is a 10,000-fold dilution or rather suspension of the pulverized tubercle bacilli. The liquid has the appearance of water and exhibits only a faint opalescence.

Tubercle Bacilli for Agglutinating Liquid:

Vials Containing 0.1 gm. each, per vial, \$1.50.

Tuberculin "Koch":

1 and 5 c.cm. Vials per c.cm., 0.35.

Tuberculin New "Koch":

1 c.cm. Vials per c.cm., 3.10.

Tuberculin New Koch Bacilli Emulsion:

1 c.cm. Vial.....per c.cm., 0.50.

5 c.cm. Vials.....per c.cm., 0.40.

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AND TUBERCULIN NEW "KOCH."**

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TUMENOL.

(*Tumenol-Sulfonic Acid.*)

Tumenol is derived from bituminous mineral by dry distillation, the resulting product subjected to the action of sulfuric acid and alkalis to remove the creasotes, acid bodies, and bases, sulfone and sulfonic acid resulting. These, when treated, yield an oil and a powder. The oil is insoluble in water, but freely so in ether, alcohol, and benzol, while the powder is soluble in water. Tumenol reduces the persalts of iron to the proto-salts; permanganate of potash to oxid of manganese; corrosive sublimate to calomel, and sulfuric to sulfurous acid. It is, therefore, incompatible with any of these products.

The three preparations are marked as Tumenol Paste, Tumenol Oil, and Tumenol Powder.

The useful properties of Tumenol—largely due to sulfonic acid—are as follows:

In eczema, when not too violently inflamed, the application of Tumenol rapidly dries it up, forming a hardened epidermis-like layer over the affected area. This action is particularly serviceable in burns of the first and second degree. It relieves the itching of not only eczema, but of other parasitic forms of dermatitis, such as prurigo and pruritus, and in fissures of the anus.

Tumenol is serviceable as a dressing for ulcerations, whether superficial or deep, if not too moist or purulent, and if there is not too great a loss of tissue.

It has no general action upon the organism, this having been determined by giving it subcutaneously to animals for weeks without producing local disturbances, or any appreciable effect upon the well-being of the subject. It has also been given internally to human beings in capsule form without recognizable disturbances or unpleasant effects.

Formula and Mode of Application: Tumenol is used in the form of moist compresses, saturated with a 2 to 5 per cent. solution in recurrent eczema of the hands, face, or thighs; in a paste in superficial ulcerations, such as lupus, impetigo contagiosa, and in pemphigus; in a tincture in the dry and squamous form of eczema, and the multiple erosions due to irritations and scratching.

Moist and vesiculous eczema can be painted with the undiluted Tumenol oil, while ulcerated surfaces can be dusted with the powder pure or mixed with a zinc dusting powder, or an ointment as below. Aqueous solutions of the powder are used 2 to 5 per cent. for saturating compresses.

Tumenol tincture is prepared as follows:

R	Tumenol	3 i.
	Ether sulfuric,	
	Spirit. vini rectific.,	
	Aqua destil. aut glycerin	āā 3 iij.
M.		

The ointment is made thus:

R	Tumenol	3 i.-ij.
	Zinc oxid.,	
	Bismuth subnit.....	āā 3 i.
	Ung. aqua rosa,	
	Ung. simplic.....	āā 3 iij.
M.	f. ung.	

Ointments are also prepared with lanolin, lead ointment, or other common bases.

Paste, 1 Ounce Jars.....per oz., \$0.70.
 Oil, 1 Ounce Bottles, per oz., 0.80.
 Powder, 1 Ounce Tins.....per oz., 1.35.

BIBLIOGRAPHY ON TUMENOL.

Neisser: *Journal de Médecine de Paris*, Dec., 1894.
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TUMENOL-AMMONIUM.

Tumenol-Ammonium, the latest addition to the Tumenol preparations, is a dark oil which is soluble in water in all proportions with neutral reaction, and which can be incorporated into ointments, tinctures, and pastes. It has proved very successful in the treatment of eczema, especially in the relapsing forms where there is much irritation accompanied with rhagadia; in parasitic forms of dermatitis, in prurigo and pruritus. In superficial ulcerations when not secreting too freely and when not purulent, such as noncontagious cutaneous pustular conditions which are apt to follow the severe forms of pediculosis, in rhagadia of the hands, and other eczemas, in scratches and bites of animals, in the treatment of scabies with mild eczema, in ulcer cruris, impetigo contagiosa, pemphigus, etc. Some working formulas which have been used in numerous dermatological clinics both in Europe and the United States are given:

1. R Tumenol-Ammonium..... 3 ss.-i.
 Ether. sulph.,
 Spir. vini rect.,
 Aq. dest. āā ad ℥v
- M.

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2. R Tumenol-Ammonium..... ʒ ss.-l.
 Ether. sulph.,
 Spirit. vini rect.,
 Glycerin..... āā ad ʒ v.

M

Both these tinctures dry up easily (the former completely, that containing glycerin to a flexible, fatty surface to which dusting powder easily adheres) and serve principally for the treatment of dry squamous eczema, compound erosions due to scratching, and pruriginous dermatoses.

3. R Tumenol-Ammonium..... ʒ ʒ-i.
 Zinc. oxydat.,
 Amyli pur.,
 Glycerin,
 Aq. dest..... āā ad ʒ v.

M.

4. R Tumenol-Ammonium..... ʒ ʒ-i.
 Zinc. oxydat.,
 Amyli pur.,
 Glycerin..... āā ʒ i.
 Aq. dest.,
 Spirit. vini..... āā ʒ l.

M. D. S. Shake thoroughly and apply with a soft brush.

Both these mixtures, of which that containing alcohol dries the more readily, are principally useful in more acute forms of eczema. Instead of starch, which causes the application to dry up more quickly and completely, French chalk may be used, which makes it somewhat more flexible.

5. R Tumenol-Ammonium..... ʒ ʒ-i.
 Zinc. oxydat.,
 Amyli pur..... āā ʒ i.
 Vaseline flav..... ʒ il.

M.

6. R Tumenol-Ammonium..... ʒ ʒ-i.
 Zinc. oxydat.,
 Bismuth. subnit..... āā ʒ ʒ-i.
 Ungent. simpl..... ʒ iv.

M.

The Tumenol-Ammonium ointment made with zinc and bismuth according to No. 6 is especially intended for use in acute forms of

eczema or in such as are accompanied with severe inflammation, and where ordinary Tumenol and zinc pastes cause irritation.

FOR ITCHING DERMATOSES.

7. R Tumenol-Ammonium $\frac{3}{4}$ i.
 Vaseline flav. ad $\frac{3}{4}$ v.
 M.

FOR SEVERE INFILTRATED OR CHRONIC ECZEMAS.

8. R Tumenol-Ammonium $\frac{3}{4}$ i.
 Ung. Vaseline plumbic ad $\frac{3}{4}$ v.
 M.

9. R Tumenol-Ammonium $\frac{3}{4}$ ij.
 Spirit. vini ad $\frac{3}{4}$ vi.
 M. D. S. For addition to baths.

10. R Tumenol-Ammonium 3 iv.
 Anthrarobin 3 i.
 Tinct. Benzoin 3 ij.
 Ether. sulph. 3 iss.
 M. (Arning's paint.)

The baths prepared with the addition of Tumenol-Ammonium, unlike coal-tar baths, cause no folliculitis; the Arning paint is recommended for treatment of furuncles with severe inflammation of the adjacent parts, and for patients suffering from general furunculosis and mycotic forms of eczema.

Ounce Bottles,
 per oz., \$0.35.

TUSSOL.

(*Antipyrin-mandelate.*)

Tussol is a fine crystallized substance formed by the fusion of basic antipyrin and mandelic acid. Besides its antipyretic properties, which are derived from the antipyrin component, it

possesses a distinctive narcotic action. The crystals dissolve well in water, but milk and alkaline fluids decompose the preparation.

Rehn, in conjunction with Blum and other medical men, employed Tussol in sixty cases of whooping cough. He states, as a preliminary, that a remedy for whooping cough exhibits its relative value in a reduction of the convulsive fits of coughing, to which the other symptoms of the disease—vomiting and loss of appetite—are due.

He determined in the majority of cases treated with Tussol a permanent decrease of the fits of coughing after six to ten days, whilst in a minority of cases the attacks decreased in number and violence in two or three days. That this reduction was due to the action of the remedy was demonstrated in several cases where, during its discontinuance, the attacks soon gained their previous violence and frequency, to be again reduced by a further administration of the remedy.

In only a single case did Tussol not give satisfactory results and this probably because it was not taken regularly and in too small doses.

The following dose and mode of administration of Tussol is recommended: For children under one year of age, $\frac{3}{4}$ to $1\frac{1}{2}$ grains pro dosi, twice daily; for children in the second and third year, $1\frac{1}{2}$ to 4 grains pro dosi, four times daily; from three to five years of age, 4 to 8 grains, three or four times daily; for patients of mature age, 8 grains may be given at a dose.

The remedy is preferably given in aqueous solutions with orange peel syrup as a corrective and when thus given is easily tolerated. *Tussol must never be given in milk nor shortly before or after food containing milk has been taken.*

Rhen found it very advantageous to give four or five doses from four o'clock in the afternoon onward in order to prevent night attacks.

1 Ounce Tins,
per oz., \$1.85.

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VALYL-HOECHST.

(*Valeryl-diethyl-amide.*)

The natural valerian preparations, which formerly were held by medical men in high esteem as nerve tonics, have of late years lost much of their reputation, mainly because of their unreliable action, which is due to the very varying quantity of the active principles in valerian.

Prof. Kionka, of the Pharmacological Institute, Breslau University, has demonstrated that the active principles contained in the fresh root are very changeable and prone to decomposition, even in drying and storing. The infusion prepared from the fresh drug can lose the whole of its virtue on standing a few days, and other preparations of the root, oil, tincture, extracts, etc., are extremely inconstant and therefore unreliable in action. These experimental investigations have indeed proved that

the statements and complaints of medical men with reference to the unreliable action of valerian root and its preparations are well founded and justifiable. It appeared to us, therefore, as a requirement of modern medicine that a chemical substance should be found possessing, if possible in an accentuated degree, all pharmacological properties of valerian. This desideratum, possessing also complete freedom from unpleasant by-effects, has been found in valeryl-diethyl-amide, which is brought into commerce under the name of "Valyl-Hoechst."

In order to preserve it from oxidizing effects of the air we supply Valyl-Hoechst in the form of gelatin capsules only, put up in bottles containing 50 capsules.

Dosage: Each Valyl capsule contains 2 grains of Valyl-Hoechst. The average dose is two or three capsules two or three times daily.

Valyl capsules should be taken during or directly after meals, or else with some milk, but not on an empty stomach.

Indications: Thorough clinical trials by recognized authorities have proved Valyl-Hoechst, which possesses the typical "valerian action" to a marked degree even in comparatively small doses, to be a nerve tonic acting on the vasomotor system and administered with success in

1. Hysteria, even in severe forms, and in hysteria virilis;
 2. Neurasthenia and hypochondriasis;
 3. Traumatic neurosis and nervous cardiac affections;
 4. Hemicrania and neuralgia;
 5. Menstrual disturbances;
- (The excessive hemorrhage and abdominal

pains in menstrual disturbances, and particularly the accompanying headache, are promptly relieved.)

6. Climacteric troubles and pregnancy. The sudden sensation of heat, rushes of blood and palpitations of the heart even in patients with normal menstruation are stayed by Valyl-Hoechst;

7. Sleeplessness from nervous disorder.

Bottles Containing 50 Capsules,
per bot., \$1.20.

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